

Attachment 145

**UNITED STATES DISTRICT COURT
WESTERN DISTRICT OF WASHINGTON
AT SEATTLE**

FEDERAL TRADE COMMISSION,

Plaintiff,

v.

AMAZON.COM, INC., a corporation;

NEIL LINDSAY, individually and as an
officer of AMAZON.COM, INC.;

RUSSELL GRANDINETTI, individually and
as an officer of AMAZON.COM, INC.; and

JAMIL GHANI, individually and as an
officer of AMAZON.COM, INC.,

Defendants.

Civil Action No. 2:23-cv-0932-JHC

EXPERT REPORT OF RONALD T. WILCOX, PH.D.

April 23, 2025

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I. Qualifications

1. On February 24, 2025, Amazon.com, Inc. (“Amazon”) submitted my opening report (“Wilcox Opening Report”),¹ which provides details on my qualifications. As discussed there, I am the NewMarket Corporation Professor of Business Administration at the Darden Graduate School of Business Administration, University of Virginia (“UVA”), where I conduct research and teach classes related to marketing. Marketing is a discipline that is focused on the study of organizations’ marketing practices based on conceptual foundations of consumer behavior. My general areas of expertise within marketing are branding, consumer behavior, surveys, statistical modeling of consumer choice, and the public policy implications of marketing. My previous positions include serving as the Senior Associate Dean for Degree Programs at UVA and as an economist at the U.S. Securities and Exchange Commission from 1999 to 2000. In addition, I received an Honors Bachelor of Arts degree in Classics and Economics from Xavier University and a Ph.D. in Business Administration (focused on marketing and econometrics) from Washington University in St. Louis. I have published several academic articles on marketing, consumer behavior, and consumer choice, including articles in leading journals such as *Journal of Marketing Research*, *Management Science*, and the *Journal of Business*. I have also published several books and co-authored the book *Marketing Analytics: Essential Tools for Data-Driven Decisions*, published by the University of Virginia Press in 2021, on the use of customer data to improve marketing decisions.
2. A copy of my curriculum vitae that provides a full list of my publications and a list of my testimony in the past four years were attached in my opening report.

II. Relevant Case Background

3. In its Amended Complaint, the Federal Trade Commission (“FTC”) makes allegations about certain Amazon Prime (“Prime”) enrollment disclosures Amazon made during the online

¹ Expert Report of Ronald T. Wilcox, Ph.D., February 24, 2025 (“Wilcox Opening Report”).

checkout process and about the customer experience in its online cancellation process for Prime.² With respect to the enrollment process, the FTC alleges that Prime does not “clearly and conspicuously” disclose “material terms” of the Prime membership, including that a Prime free trial auto-renews unless cancelled.³ With respect to the cancellation process, the FTC alleges that Amazon’s cancellation process was difficult to locate and to complete,⁴ and inhibited consumers who wanted to cancel their Prime membership from doing so.⁵ In particular, the FTC alleges that, approximately from 2016 to April 2023,⁶ Amazon’s “Four-Page, Six-Click, Fifteen-Option” cancellation process,⁷ through which Prime members could cancel their Prime

² Amended Complaint for Permanent Injunction, Civil Penalties, Monetary Relief, and Other Equitable Relief, *Federal Trade Commission v. Amazon.com, Inc., et al.*, United States District Court for the Western District of Washington at Seattle, Case No. 2:23-cv-0932-JHC, September 20, 2023 (“Amended Complaint”), ¶ 2 (“For years, Defendant Amazon.com, Inc. (‘Amazon’) and its leadership have knowingly duped millions of consumers into unknowingly enrolling in its Amazon Prime service[.]”), ¶ 7 (“For years, Amazon also knowingly complicated the cancellation process for Prime subscribers who sought to end their membership.”), ¶ 107 (“In each pathway (UPDP, SOSP, SPC, TrueSPC, and mobile), Amazon fails to provide clear and conspicuous disclosures regarding the Prime subscription program’s material terms: its price, and the fact that it renews automatically unless the consumer affirmatively cancels.”), ¶ 272 (“Defendants failed to clearly and conspicuously disclose all material terms of the transaction, including the price of Prime, its auto-renewal provision, and cancellation requirements, before obtaining the consumer’s billing information.”).

³ Amended Complaint, ¶ 107 (“In each pathway (UPDP, SOSP, SPC, TrueSPC, and mobile), Amazon fails to provide clear and conspicuous disclosures regarding the Prime subscription program’s material terms: its price, and the fact that it renews automatically unless the consumer affirmatively cancels.”), ¶ 272 (“Defendants failed to clearly and conspicuously disclose all material terms of the transaction, including the price of Prime, its auto-renewal provision, and cancellation requirements, before obtaining the consumer’s billing information.”); Plaintiff’s Opposition to Defendants’ Motions to Dismiss Amended Complaint, *Federal Trade Commission v. Amazon.com, Inc., et al.*, United States District Court for the Western District of Washington at Seattle, Case No. 2:23-cv-0932-JHC, November 17, 2023 (“FTC’s Opposition to Motion to Dismiss”), p. 31 (“Because the Complaint more than plausibly alleges Amazon did not make clear and conspicuous disclosures [...] it equally plausibly alleges consumers did not give express informed consent for automatically-renewing Prime subscriptions.”).

⁴ Amended Complaint, ¶ 131 (“To cancel via the Iliad Flow, a consumer had to first locate it, which Amazon made difficult.”), ¶ 231.c (“Amazon [...] mak[es] the ingress to the Iliad Flow difficult for consumers to locate...”), ¶ 140 (“Once consumers reached the Iliad Flow, they had to proceed through its entirety—spanning three pages, each of which presented consumers several options, beyond the Prime Central page—to cancel Prime.”).

⁵ Amended Complaint, ¶ 162 (“Amazon did not design the Iliad Flow to be simple or easy for consumers. The Iliad Flow inhibits or prevents many consumers who intend to cancel from cancelling their membership.”), p. 90 (“Violation of ROSCA—Failure To Provide Simple Cancellation Mechanism”), ¶ 278 (“Defendants fail to provide simple mechanisms for a consumer to stop recurring charges for the good or service to the consumer’s credit card, debit card, bank account, or other financial account.”).

⁶ Amended Complaint, ¶ 130 (“Amazon launched the Iliad Flow in 2016, and did not substantially change it in the United States until in or about April 2023.”).

⁷ Amended Complaint, ¶ 128 (“The Iliad Flow required consumers intending to cancel to navigate a four-page, six-click, fifteen-option cancellation process.”), ¶ 131 (“Consumers could access the Iliad Flow from Amazon.com by navigating to the Prime Central page[.]”).

membership on Amazon.com, was difficult to locate and to complete,⁸ and inhibited consumers who wanted to cancel their Prime membership from doing so.⁹ This cancellation process described by the FTC consists of the Prime Central page, which is the membership management page for Prime members,¹⁰ and three additional pages (“Cancellation Flow”).¹¹

4. In my opening report, I was asked to design and conduct two surveys: a survey to assess the experiences of U.S. consumers with free trials of memberships or subscriptions that automatically turn into paid memberships or subscriptions unless cancelled (“Free Trials Survey”),¹² and a survey to assess the extent to which Prime members can locate and complete the desktop version of the Cancellation Flow on Amazon.com as described in the Amended Complaint (“Cancellation Survey”).¹³

5. The Free Trials Survey asked respondents questions to assess their familiarity with memberships or subscriptions.¹⁴ The results of the Free Trials Survey showed that, at the time of the survey, 92.5% of respondents reported that they paid for at least one membership or subscription from the list that was provided,¹⁵ 58.0% of respondents reported signing up for one or more free trials of memberships or subscriptions in the past 12 months.¹⁶ Among respondents who reported signing up for one or more free trials of memberships or subscriptions in the past 12 months, 85.0% indicated that the free trial they had most recently signed up for either automatically turned into a paid membership or subscription at the end of the trial period, or

⁸ Amended Complaint, ¶¶ 131–133 (“To cancel via the Iliad Flow, a consumer had to first locate it, which Amazon made difficult.”), ¶ 231.c.ii (“Amazon [...] mak[es] the ingress to the Iliad Flow difficult for consumers to locate...”), ¶ 140 (“Once consumers reached the Iliad Flow, they had to proceed through its entirety—spanning three pages, each of which presented consumers several options, beyond the Prime Central page—to cancel Prime.”).

⁹ Amended Complaint, ¶ 162 (“The Iliad Flow inhibits or prevents many consumers who intend to cancel from cancelling their membership.”); FTC’s Opposition to Motion to Dismiss, p. 36 (“The Iliad Flow not only needlessly and unlawfully complicated consumers’ cancellation processes, but also prevented consumers who wanted to cancel, and thought they had cancelled, from actually doing so.”).

¹⁰ Amended Complaint, ¶ 139 (“Prime account management page (Prime Central)”).

¹¹ Amended Complaint, ¶ 140 (“Once consumers reached the Iliad Flow, they had to proceed through its entirety—spanning three pages.”).

¹² Wilcox Opening Report, ¶ 11.

¹³ Wilcox Opening Report, ¶ 11.

¹⁴ Wilcox Opening Report, ¶ 55.

¹⁵ Wilcox Opening Report, ¶ 16.

¹⁶ Wilcox Opening Report, ¶ 16.

would have automatically turned into a paid membership or subscription at the end of the trial period if they had not cancelled it first.¹⁷

6. The Cancellation Survey presented respondents with a simulated portion of the Amazon.com website and instructed them to navigate the simulated website as they would if they wanted to cancel their Prime membership.¹⁸ The results of the survey showed that 99.8% of respondents (529 out of 530) located the Cancellation Flow and 96.4% of respondents (511 out of 530) paused or ended their Prime membership.¹⁹

7. On February 24, 2025, the FTC submitted an expert report by Prof. Marshini Chetty (“Prof. Chetty”).²⁰ In that report, Prof. Chetty was asked to opine on whether Amazon’s Prime enrollment process during checkout was confusing for consumers, whether it clearly conveyed to them information about Prime’s terms, and whether the Prime cancellation process was confusing for consumers.²¹ Prof. Chetty conducted a “cognitive walkthrough” and a “think aloud” study,²² and concluded that: (a) “[t]he design of how Amazon enrolls consumers in Prime [...] during online checkout can confuse consumers to unintentionally enroll in Prime because it violates good design principles;”²³ (b) “[t]he design of how Amazon enrolls consumers in Prime during online checkout does not convey information on Prime’s material terms [...] in a way that consumers are likely to comprehend;”²⁴ and (c) “[t]he design of the [online] cancellation processes can confuse consumers because they contain too many unnecessary steps and use manipulative designs[.]”²⁵

¹⁷ Wilcox Opening Report, ¶ 16.

¹⁸ Wilcox Opening Report, ¶ 15 (“I designed and conducted a survey that presented respondents with a simulated portion of the Amazon.com website. Respondents were instructed to navigate the simulated website as they would if they wanted to cancel their Prime membership.”).

¹⁹ Wilcox Opening Report, ¶ 15.

²⁰ Expert Report of Marshini Chetty, Ph.D., February 24, 2025 (“Chetty Opening Report”).

²¹ Chetty Opening Report, p. 1 (“The Federal Trade Commission (‘FTC’) asked me to render an expert opinion on: (1) whether the design of how Amazon enrolls consumers in Prime during online checkout confuses consumers; (2) whether the design of how Amazon enrolls consumers in Prime during online checkout conveys information on Prime’s material terms (cost, end of free trial period, and renewal terms) that consumers can comprehend; and (3) whether the design of the Prime Iliad and Iliad 2.0 cancellation processes confuses consumers.”).

²² Chetty Opening Report, p. 1.

²³ Chetty Opening Report, ¶ 361 (i).

²⁴ Chetty Opening Report, ¶ 361 (ii).

²⁵ Chetty Opening Report, ¶ 361 (iii).

8. On March 24, 2025, the FTC submitted an expert report by Prof. Neale Mahoney (“Prof. Mahoney”).²⁶ In that report, Prof. Mahoney was asked, among others, to opine on “[t]he extent to which customers attempted to cancel their Amazon Prime memberships and believed that they had done so but did not in fact complete the cancellation process, as well as how much such customers subsequently paid to Amazon in Prime membership fees.”²⁷ Using data on a sample of Prime memberships where the Prime member entered the Cancellation Flow and exited without cancelling or pausing their membership in their first entry,²⁸ Prof. Mahoney conducted difference-in-differences regressions to “estimate the share of subscribers who mistakenly believe[d] they [had] cancelled Prime” after what Prof. Mahoney calls an “unsuccessful cancellation.”²⁹ Prof. Mahoney concluded that “[a] substantial number of consumers who entered Amazon’s cancellation process did not complete their cancellation and continued to pay Prime subscription fees to Amazon,” and that “Prime benefit usage patterns indicate that a substantial number of subscribers exited the cancellation process with the mistaken belief that they successfully cancelled their Prime subscription.”³⁰

²⁶ Expert Report of Neale Mahoney, Ph.D., March 24, 2025 (“Mahoney Report”).

²⁷ Mahoney Report, ¶ 10.

²⁸ Mahoney Report, ¶ 119 (“To analyze economic harm from unsuccessful cancellations by users who likely thought they had cancelled, I start with a sample of about [REDACTED] unique subscriptions among about [REDACTED] Prime subscribers who entered the Iliad process and exited it without cancelling or pausing their membership during their first entry to the process.”).

²⁹ Mahoney Report, ¶¶ 125–126 (“[T]o estimate the share of subscribers who mistakenly believe they have cancelled Prime, I use a difference-in-differences regression analysis to measure the increase in the percentage of subscriptions with zero Prime benefit usage in the ‘No Page’ group over and above the corresponding increase among subscribers who accepted an offer, while controlling for other factors that may affect Prime benefit usage. I conduct the same analysis for the ‘Prime Central’ action group. Difference-in-differences regressions are a standard statistical analysis for establishing the impact of an event (in this context, unsuccessful cancellation) on an outcome (Prime benefit usage) and for quantifying the extent of that impact.”). When discussing his difference-in-differences regressions, Prof. Mahoney made several references to the “Iliad cancellation process.” *See, e.g.*, Mahoney Report, ¶¶ 107, 110, 112. I understand that Prof. Mahoney’s “Iliad cancellation process” referred to the last three pages of the cancellation process. *See* Mahoney Report, ¶ 113 (“Based on my analysis of Amazon’s data covering subscribers who reached the three-page portion of the Iliad process between July 2019 and March 2023, and the subsequent actions such subscribers took, I group actions that result in incomplete cancellations into the following categories[.]”). In my opening report, I referred to these last three pages of the cancellation process as the “Cancellation Flow,” and that is the language that I use in this report as well to refer to those pages. *See* Wilcox Opening Report, ¶ 8 (“This cancellation process described by the FTC consists of the Prime Central page, which is the membership management page for Prime members, and three additional pages (‘Cancellation Flow’).”).

³⁰ Mahoney Report, ¶ 16.

III. Assignment

9. With respect to the Mahoney Report, I was asked by counsel for Amazon to assess whether the assumptions underlying the difference-in-differences regressions Prof. Mahoney presented in Section IV of his report are appropriate and allow him to support his conclusion that “Prime benefit usage patterns indicate that a substantial number of subscribers exited the cancellation process with the mistaken belief that they successfully cancelled their Prime subscription.”³¹

10. With respect to the Chetty Opening Report, I was asked by counsel for Amazon to evaluate whether Prof. Chetty’s “think aloud” study supports Prof. Chetty’s conclusions about Amazon Prime’s enrollment process during checkout and Amazon Prime’s online cancellation process.

11. In carrying out my assignment, I relied on my training, experience, and expertise in marketing, consumer behavior, consumer research, and marketing analytics. I also examined various materials, including relevant academic literature, case materials, Sections IV.A–IV.C.1 of the Mahoney Report, and Section VIII of the Chetty Opening Report and the relevant content of its backup materials (“Chetty Backup Materials”).³² A complete list of materials I considered in forming my opinions is in **Appendix A**.

12. I have been assisted in my work on this matter by staff of Cornerstone Research, who worked under my direction. I am being compensated at my current rate of \$1,050 per hour. I also receive compensation from Cornerstone Research based on its collected staff billings for its support of me in this matter. Neither my compensation in this matter nor my compensation from Cornerstone Research is in any way contingent or based on the content of my opinions or the outcome of this or any other matter.

13. My work on this matter is ongoing and I reserve the right to update and supplement my opinions as additional information becomes available.

³¹ Mahoney Report, ¶ 16.

³² In addition, I examined any other parts of the Mahoney Report and Chetty Opening Report that could be relevant to understanding the context of these sections.

IV. Summary of Opinions

14. In his report, Prof. Mahoney estimated difference-in-differences regressions to measure the share of Amazon Prime members who exited the Cancellation Flow with the mistaken belief that they had cancelled their Prime membership. These regressions compared the patterns of Prime shipping benefit usage before and after Prime members exited the Cancellation Flow without cancelling between the “treated” group (Prime members who exited the Cancellation Flow with what Prof. Mahoney considers an “unsuccessful cancellation” and, according to Prof. Mahoney, could have mistakenly believed that they had successfully canceled their Prime membership) and the “control” group, which Prof. Mahoney calls the “Accept an Offer” group (Prime members who accepted an offer in the Cancellation Flow, and thus, according to Prof. Mahoney, likely knew that they did not cancel their Prime membership).

15. Based on my review, I find that Prof. Mahoney’s difference-in-differences regressions relied on inappropriate or unfounded assumptions regarding the behavior of Prime members, and his conclusions regarding the share of Prime members who had the mistaken belief that they had cancelled their Prime membership cannot be supported by his analysis.

16. First, the “control” group Prof. Mahoney relied on in his difference-in-differences regressions is inappropriate. It is unlikely that, absent the “treatment” (in this context, exiting the Cancellation Flow with what Prof. Mahoney considers an “unsuccessful cancellation”), Prime shipping benefits usage in this group would have increased or decreased in the same magnitude as in the “treated” group, a key assumption underlying difference-in-differences analysis.

17. In fact, Prime members who accepted an offer presented by Amazon in the Cancellation Flow to continue as a member of Prime (which, I understand, are offers to switch to alternative payment plans or claim a membership fee discount that an individual may qualify for) likely had stronger incentives to use more Prime shipping benefits after accepting the offer. Several factors relating to consumer behavior and decision-making could influence the level of shipping benefit usage after accepting an offer. For example, the savings generated by an offer presented and accepted during the Cancellation Flow could have been used by Prime members to purchase products on Amazon using Prime shipping benefits. Also, price discounts increase customer

loyalty and enhance brand experience, which could lead to increased Prime benefit usage, including shipping benefits. Consistent with this, Prof. Mahoney's own analysis shows that Prime shipping benefits usage increased for the control group after exiting the Cancellation Flow. Therefore, Prof. Mahoney likely overestimated the share of Prime members who exited the Cancellation Flow with the mistaken belief that they had cancelled their Prime membership.

18. Furthermore, Prof. Mahoney could have selected a different control group that did not have the same issues as Prime members who accepted an offer in the Cancellation Flow. For example, Prof. Mahoney could have selected as his control group Prime members who clicked on either the "Keep My Benefits" or "Keep My Membership" buttons. Prime members who clicked on either of those buttons did not accept offers that could have affected their incentives to use Prime shipping benefits, and also likely knew that they had not cancelled their Prime membership. However, Prof. Mahoney decided not to use these groups as controls.

19. Second, Prof. Mahoney's difference-in-differences regressions relied on inferences regarding Prime members' intent or confusion based on data about their behavior while going through the Cancellation Flow (which did not include direct measurements of intent or confusion). Specifically, in order to identify the allegedly confused Prime members:

- a. Prof. Mahoney assumed that all Prime members in his "treated" group intended to cancel their Prime membership. However, Prof. Mahoney did not know the intent to cancel of Prime members and his assumption might not hold as different Prime members may enter the Cancellation Flow with different intentions or different degrees of interest in cancelling their Prime membership. As a result, Prof. Mahoney likely overestimated the number of Prime members who intended to cancel Prime because some of the "treated" Prime members did not really intend to cancel.
- b. Prof. Mahoney also assumed that the fact that some Prime members did not actively use their Prime shipping benefits, or used them to a lesser extent, after entering and exiting the Cancellation Flow without cancelling their Prime membership indicated that these Prime members mistakenly thought they

cancelled their Prime membership. However, Prof. Mahoney does not know if Prime members who did not use shipping benefits believed that they had cancelled their Prime membership, and he excluded the possibility that a Prime member may choose to use their Prime shipping benefits only sporadically. Furthermore, even though Prof. Mahoney had data on Prime members' use of Prime benefits in general, he only considered the Prime members use of Prime shipping benefits.

20. In contrast to Prof. Mahoney's analysis, the Cancellation Survey I presented in my opening report did not rely on such assumptions and instead provides direct evidence of the cancellation rate among Prime members who intend to cancel. The Cancellation Survey presented respondents with a simulated portion of the Amazon.com website and instructed them to navigate it as they would if they wanted to cancel their Prime membership. Because respondents were directly instructed to cancel, the survey relied on neither the assumption that respondents intended to cancel, nor the assumption that the use of Prime shipping benefits is indicative of beliefs regarding cancellation. The Cancellation Survey showed that 96.4% of respondents either paused or cancelled their Prime membership when instructed to do so.

21. In her report, Prof. Chetty conducted a "think aloud" study and presented participants with the website of a fictitious company called CandyForever, which included a checkout process in which participants could enroll in a fictitious subscription called Premium (which purportedly mimicked Prime), and a cancellation process for that subscription. Participants were asked to go through the checkout process, where they could enroll in the Premium subscription, and then were asked to go through the cancellation process of the Premium subscription. Based on my review, I find that Prof. Chetty's "think aloud" study does not support her conclusions about the Prime enrollment process during checkout and the Prime online cancellation process.

22. First, Prof. Chetty's "think aloud" study was not designed to isolate the effect of the design elements at issue—including those that purportedly contain "dark patterns"—on the alleged consumer confusion—accidental or uninformed enrollments to Prime, and difficult or failed cancellations of Prime—because her study lacks an experimental design. Without an

experimental design that includes a test and a control group, it is not possible for Prof. Chetty to isolate the effect, if any, of the challenged conduct from any other sources of consumer confusion (including those that may have resulted from the design of Prof. Chetty's own study), and therefore, Prof. Chetty's conclusions cannot be supported by her study.

23. Second, Prof. Chetty's "think aloud" study relied on a sample that is small (a total of 30 participants) and not representative of the relevant populations for the Prime enrollment process and the Prime cancellation process. The relevant population for a proper assessment of the Prime enrollment process is composed of Amazon shoppers without a Prime membership, as these are the individuals who could face the Prime offer Amazon presents during the online checkout process (e.g., the Universal Prime Decision Page or UPDP). Similarly, the relevant population for a proper assessment of the Prime cancellation process is composed of Prime members, as these are the individuals who could be interested in cancelling a Prime membership. Prof. Chetty's "think aloud" study did not use a sample representative of either of these populations. As such, Prof. Chetty's "think aloud" study does not allow her to reach reliable conclusions about the behavior and experience of the relevant populations of consumers.

24. Third, certain design characteristics of Prof. Chetty's "think aloud" study render it unreliable, biased, and irrelevant. Specifically:

- a. Prof. Chetty's "think aloud" study attempted to measure consumer confusion by asking participants to recall the terms and conditions of the Premium subscription after the checkout task, but, at best, this would measure participants' recall rather than understanding of the terms and conditions of the Premium subscription. Given that participants were not instructed to review the terms and conditions, let alone told that they would need to remember such information, it is not possible to conclude from Prof. Chetty's "think aloud" study that the terms and conditions of Premium were not conveyed in a way that participants could comprehend, or generalize that conclusion to Prime.
- b. Prof. Chetty's "think aloud" study relied on a fictitious subscription that does not replicate the Prime membership. Hence, the behavior and potential confusion

among Prof. Chetty's study participants when considering enrolling in Premium are not informative about the behavior and potential confusion among Amazon shoppers when considering enrolling in Prime during the checkout process.

- c. Prof. Chetty's "think aloud" study measured key outcomes arbitrarily as certain questions were not asked to participants in a systematic manner, but instead relied on the discretion of a research assistant. The lack of a systematic method to ask questions to participants may have affected the results of Prof. Chetty's "think aloud" study. Therefore, the results of this study cannot be used to draw reliable conclusions about the behavior or potential confusion of Amazon shoppers when considering enrolling in Prime during the checkout process, and of Prime members when going through the Prime cancellation process.
- d. Prof. Chetty's "think aloud" study relied on an artificial setting that likely confused participants and introduced biases. This artificial setting included (i) the presence and intervention of a research assistant, which likely affected participants' behavior due to "demand effect" and the "Hawthorne effect," (ii) representations made to participants about the CandyForever website which could have been hard to believe or confusing for participants, and (iii) instructions for participants that were confusing and contradictory, such as telling participants that they had enrolled in Premium even if they had chosen not to do so. Because of this, it is likely that participants in Prof. Chetty's "think aloud" study did not interact with the fictitious CandyForever website as they would with the real Amazon website.

V. Overview and Rebuttal of Prof. Mahoney's Relevant Opinions and Analysis

A. Summary of Prof. Mahoney's Estimation of Allegedly Confused Prime Members Who Entered the Cancellation Flow but Did Not Cancel Their Prime Membership

25. Prof. Mahoney claims that some Prime members who entered the Prime Cancellation Flow but did not cancel their Prime membership “believed that they successfully cancelled when in fact they did not,”³³ and that “Amazon continues to charge those subscribers the Prime fee until they successfully cancel their subscriptions.”³⁴ Prof. Mahoney further claims that “[t]o the extent that the design of the Iliad process misleads or confuses subscribers into falsely believing that they cancelled their subscription, those subscribers would be paying for Prime benefits that they think they no longer have.”³⁵

26. In particular, according to Prof. Mahoney, some Prime members who entered the Cancellation Flow but navigated away from it or closed their browsers during the Cancellation Flow “may have mistakenly believed that they successfully cancelled their subscription.”³⁶

27. In his analysis, Prof. Mahoney used a sample of approximately 450,000 unique Prime memberships (relating to approximately 390,000 Prime members) where the Prime member “entered the Iliad process and exited it without cancelling or pausing their membership during their first entry to the process.”³⁷ Prof. Mahoney then assigned the Prime memberships in his

³³ Mahoney Report, ¶ 107.

³⁴ Mahoney Report, ¶ 109.

³⁵ Mahoney Report, ¶ 109.

³⁶ Mahoney Report, ¶ 116.

³⁷ Mahoney Report, ¶ 119. Prof. Mahoney's difference-in-differences regressions identified unintended cancellations using data on Prime memberships. A single Prime member can have multiple Prime memberships in his data. *See* Mahoney Report, ¶ 119 (“To analyze economic harm from unsuccessful cancellations by users who likely thought they had cancelled, I start with a sample of about [REDACTED] unique subscriptions among about [REDACTED] Prime subscribers who entered the Iliad process and exited it without cancelling or pausing their membership during their first entry to the process.”). However, even though Prof. Mahoney's difference-in-differences regressions used data on Prime memberships and not Prime members, Prof. Mahoney sometimes refers to analyses that relate to Prime members. *See, e.g.,* Mahoney Report, ¶ 130 (“In this section, I calculate the economic harm sustained by Prime subscribers who exited the Iliad process with the mistaken belief that they cancelled their memberships”), ¶ 132 (“Calculating total payments by subscribers in the No Page and Prime Central action groups, multiplying this sum by each group's corresponding difference-in-differences regression coefficient, and extrapolating this sum to the full population of Prime subscribers yields the estimated dollar harm for each group.”).

sample to one of six groups according to the actions that resulted in what Prof. Mahoney deemed as an “incomplete cancellation.”³⁸ Specifically:

- a. The “Accept an Offer” group refers to Prime memberships in which the Prime member entered the Cancellation Flow and “[c]lick[ed] on a button on the Offer Page to accept an offer presented by Amazon as incentive to continue as a Prime subscriber” and therefore did not cancel Prime “during their first entry” to the Cancellation Flow.³⁹ I understand that the offers presented to Prime members in the Offer Page were switching to alternative payment plans (annual or monthly) or claiming a membership fee discount for students and recipients of government benefits.⁴⁰
- b. The “Keep My Benefits/Keep My Membership” group refers to Prime memberships in which the Prime member entered the Cancellation Flow and “[c]lick[ed] on the Keep My Benefits button [...] or the Keep My Membership

³⁸ Mahoney Report, ¶ 113 (“Based on my analysis of Amazon’s data covering subscribers who reached the three-page portion of the Iliad process between July 2019 and March 2023, and the subsequent actions such subscribers took [in the Iliad process], I group actions that result in incomplete cancellations into the following categories [...]).”)

³⁹ Mahoney Report, ¶ 113 (“‘Accept an Offer’—Clicking on a button on the Offer Page to accept an offer presented by Amazon as an incentive to continue as a Prime subscriber.”), ¶ 119 (“To analyze economic harm from unsuccessful cancellations by users who likely thought they had cancelled, I start with a sample of about [REDACTED] unique subscriptions among about [REDACTED] Prime subscribers who entered the Iliad process and exited it without cancelling or pausing their membership during their first entry to the process.”).

⁴⁰ Prime members who clicked on the “Have an EBT card/receive government assistance?” link on the Marketing page were directed to a page that provided information about the Discounted Prime plan. Furthermore, Prime members who clicked on the “Are you a student?” link on the Marketing page were directed to a page that provided information about the Prime Student plan. Finally, on the Marketing page, Prime members with a monthly membership were presented with an option to switch to a yearly membership (or vice versa). I relied on information from Mr. Benjamin Goeltz, Senior Product Manager at Amazon Prime, regarding the cancellation process and the active links and buttons in place around August 2022. *See also* Attachment Q of the Amended Complaint, p. 4; Amended Complaint, ¶ 143 (“On the second page of the Iliad Flow, Amazon presented consumers with alternative or discounted pricing, such as the option to switch from monthly to annual payments (and vice-versa), student discounts, and discounts for individuals with EBT cards or who receive government assistance.”); Mahoney Report, ¶ 35 (“Amazon next directed consumers who clicked Continue To Cancel on the Marketing Page to the ‘Offer Page,’ which provided consumers the option to switch to a different Prime plan (e.g., from monthly to annual or vice versa).”).

button” and therefore did not cancel Prime “during their first entry” to the Cancellation Flow.⁴¹

- c. The “Remind Me Later” group refers to Prime memberships in which the Prime member entered the Cancellation Flow and “[c]lick[ed] on the Remind Me Later button” and therefore did not cancel Prime “during their first entry” to the Cancellation Flow.⁴²
- d. The “No Page” group refers to Prime memberships in which the Prime member entered the Cancellation Flow and then “[n]avigat[ed] away” from the Cancellation Flow (e.g., “by going to a non-Amazon website or closing the browser”) and therefore did not cancel Prime “during their first entry” to the Cancellation Flow; and Prime memberships in which the Prime member entered the Cancellation Flow, did not cancel their Prime membership, and took no action “for at least [two] hours” and therefore did not cancel Prime “during their first entry” to the Cancellation Flow.⁴³
- e. The “Prime Central” group refers to Prime memberships in which the Prime member entered the Cancellation Flow and “[c]lick[ed] on a link or feature in the Iliad process that return[ed] the subscriber to the Prime Central page (other than clicking on the Keep My Benefits/Keep My Membership or Remind Me Later

⁴¹ Mahoney Report, ¶ 113 (“‘Keep My Benefits/Keep My Membership’—Clicking on the Keep My Benefits button on the Marketing Page, or the Keep My Membership button on either the Offer Page or the Cancellation Page.”), ¶ 119 (“To analyze economic harm from unsuccessful cancellations by users who likely thought they had cancelled, I start with a sample of about [REDACTED] unique subscriptions among about [REDACTED] Prime subscribers who entered the Iliad process and exited it without cancelling or pausing their membership during their first entry to the process.”).

⁴² Mahoney Report, ¶ 113 (“‘Remind Me Later’—Clicking on the Remind Me Later button on the Marketing, Offer, or Cancellation pages.”), ¶ 119 (“To analyze economic harm from unsuccessful cancellations by users who likely thought they had cancelled, I start with a sample of about [REDACTED] unique subscriptions among about [REDACTED] Prime subscribers who entered the Iliad process and exited it without cancelling or pausing their membership during their first entry to the process.”).

⁴³ Mahoney Report, ¶ 113 (“‘No Page’—Navigating away from the Iliad process, e.g., by going to a non-Amazon website or closing the browser, or taking no action on any page of the Iliad process for at least 2 hours.”), ¶ 119 (“To analyze economic harm from unsuccessful cancellations by users who likely thought they had cancelled, I start with a sample of about [REDACTED] unique subscriptions among about [REDACTED] Prime subscribers who entered the Iliad process and exited it without cancelling or pausing their membership during their first entry to the process.”), footnote 101 (“I categorize a subscriber’s action as ‘No Page’ if the last action that subscriber took in the Iliad process did not lead to a successful cancellation and no further action was recorded in the data.”).

buttons)” and therefore did not cancel Prime “during their first entry” to the Cancellation Flow.⁴⁴

- f. The “Other” group refers to Prime memberships in which the Prime Member entered the Cancellation Flow and “[took] any other action that [led] to exiting the Iliad process without completing cancellation” and therefore did not cancel Prime “during their first entry” to the Cancellation Flow.⁴⁵

28. Prof. Mahoney presented two difference-in-differences regressions that compared the patterns of Prime shipping benefit usage in (a) the period that started 90 days before entry into the Cancellation Flow and continued until five days before entry into the Cancellation Flow, and (b) the period that started five days after entry into the Cancellation Flow and continued until 90 days after entry into the Cancellation Flow.⁴⁶ The control group in these regressions consisted of Prime memberships in which the Prime members accepted an offer in the Cancellation Flow (the “Accept an Offer” group). The treated group consisted of Prime memberships in which the Prime member “navigated away” from the Cancellation Flow (the “No Page” group) in one of the difference-in-differences regressions, and consisted of Prime members who navigated to the Prime Central page (the “Prime Central” group) in the other difference-in-differences

⁴⁴ Mahoney Report, ¶ 113 (“‘Prime Central’—Clicking on a link or feature in the Iliad process that returns the subscriber to the Prime Central Page (other than clicking on the Keep My Benefits/Keep My Membership or Remind Me Later buttons).”), ¶ 119 (“To analyze economic harm from unsuccessful cancellations by users who likely thought they had cancelled, I start with a sample of about [REDACTED] unique subscriptions among about [REDACTED] Prime subscribers who entered the Iliad process and exited it without cancelling or pausing their membership during their first entry to the process.”).

⁴⁵ Mahoney Report, ¶ 113 (“‘Other’—Taking any other action that leads to exiting the Iliad process without completing cancellation.”), ¶ 119 (“To analyze economic harm from unsuccessful cancellations by users who likely thought they had cancelled, I start with a sample of about [REDACTED] unique subscriptions among about [REDACTED] Prime subscribers who entered the Iliad process and exited it without cancelling or pausing their membership during their first entry to the process.”). For example, Prime members who clicked on the “today’s deals” link on the Benefits Information page were directed to a “Today’s Deals” page, and Prime members who clicked on the “Start listening now!” link on the Benefits Information page were directed to an “Amazon Music” page. I relied on information from Mr. Benjamin Goeltz, Senior Product Manager at Amazon Prime, regarding the cancellation process and the active links and buttons in place around August 2022. *See also* Attachment Q of the Amended Complaint, p. 3. Prof. Mahoney, based on his report, would have classified Prime members who clicked on those links within the “Other” category. *See* Mahoney Report, ¶ 113.

⁴⁶ Mahoney Report, ¶ 119 (“I define the *pre-entry* window as the period that starts 90 days before the subscriber enters the Marketing Page of the Iliad process (or the day after enrollment if that occurs within 90 days) and continues to 5 days prior to first entry into the Iliad process. I define the *post-entry* window as the period that starts 5 days after the subscriber enters the Iliad process and ends 90 days after they entered the process or when they next enter the Iliad process (if that occurs within 90 days).”). *Emphasis in original.*

regression.⁴⁷ The key outcome that Prof. Mahoney considered in both difference-in-differences regressions was whether Prime shipping benefits were used,⁴⁸ and he assumed that not using Prime shipping benefits meant that Prime members mistakenly believed that they had cancelled their Prime membership.⁴⁹

29. Prof. Mahoney claims that these regressions can “estimate the share of subscribers in the ‘No Page’ group [and the ‘Prime Central’ group] who exited the Iliad process with the mistaken belief that they cancelled their subscription,”⁵⁰ and that the results of these regressions “establish economic harm from unsuccessful cancellations where customers believed they had cancelled.”⁵¹

B. Prof. Mahoney’s Estimation Relied on An Inappropriate Control Group

30. As part of his analysis, Prof. Mahoney focused on the period after a Prime member entered the Cancellation Flow but left the process without canceling.⁵² Prof. Mahoney assumed (but did not establish) that no usage of Prime shipping benefits in this “after” period was indicative of

⁴⁷ Mahoney Report, ¶ 124 (“I use a difference-in-differences regression in which subscribers who accepted an offer in the Iliad process are the ‘control’ and subscribers who fall in the ‘No Page’ group are the ‘treatment’ to estimate the share of subscribers in the ‘No Page’ group who exited the Iliad process with the mistaken belief that they cancelled their subscription. I run the same regression for the ‘Prime Central’ action group (but, as described above, not for the ‘Remind Me Later’ or ‘Keep My Benefits/Keep My Membership’ groups).”).

⁴⁸ Prof. Mahoney had data on Prime members’ use of Prime benefits in general and, in fact, used it as part of the motivation for his difference-in-differences regressions, but when conducting his difference-in-differences regressions, he only considered the Prime members use of Prime shipping benefits. Mahoney Report, Figure 28, ¶ 128 (“To measure pre- and post-entry usage, I focus on shipping benefits only...”). *See also* Mahoney Report, ¶ 21 (“Prime subscriptions provide consumers access to various shipping and non-shipping benefits. Prime’s shipping benefits generally include faster shipping options, like two-day, one-day, or same-day shipping, for no additional cost beyond the membership fees. Prime’s non-shipping benefits include, among other things, digital benefits, such as access to certain Prime Video and Amazon Music services, and shopping benefits, such as discounts and deals.”).

⁴⁹ As I explain in Section V.C, this assumption is unsupported and contradicted by Prof. Mahoney’s analysis.

⁵⁰ Mahoney Report, ¶ 124.

⁵¹ Mahoney Report, ¶ 124.

⁵² Mahoney Report, ¶ 119 (“To analyze economic harm from unsuccessful cancellations by users who likely thought they had cancelled, I start with a sample of about [REDACTED] unique subscriptions among about [REDACTED] Prime subscribers who entered the Iliad process and exited it without cancelling or pausing their membership during their first entry to the process. These are subscribers from the 5 million sample, described in Section II.D, who entered the Iliad process between July 2019 and June 2023. I define the pre-entry window as the period that starts 90 days before the subscriber enters the Marketing Page of the Iliad process (or the day after enrollment if that occurs within 90 days) and continues to 5 days prior to first entry into the Iliad process. I define the post-entry window as the period that starts 5 days after the subscriber enters the Iliad process and ends 90 days after they entered the process or when they next enter the Iliad process (if that occurs within 90 days).”). *Emphasis removed.*

that Prime member's mistaken belief that they had cancelled their Prime membership.⁵³

However, as Prof. Mahoney acknowledges, "[a] mistaken belief that a subscription has been cancelled is [only] one reason usage might fall to zero after entering and leaving the cancellation process" because "it is also possible that consumers who leave the Iliad process subsequently have zero Prime benefit usage for other reasons."⁵⁴

31. Therefore, to account for these alternative reasons that Prime benefit usage could be zero, Prof. Mahoney implemented difference-in-differences regressions. In general, a difference-in-differences regression measures the effect of a given "treatment" (in this context, exiting the Cancellation Flow with what Prof. Mahoney considers an "unsuccessful cancellation") on a given outcome variable (in this context, zero Prime shipping benefits usage). To implement a difference-in-differences regression, two groups need to be identified: a group that eventually receives the "treatment" (the "treated group") and a group that does not (the "control group").

32. A difference-in-differences regression estimates the effect of the "treatment" as the change in the outcome variable in the treated group after this group receives the "treatment" in excess of the change in the outcome variable in the control group.⁵⁵ The key assumption in a difference-in-differences regression is that, absent the "treatment," the evolution of the outcome variable in the treated group would have been parallel to the one in the control group (i.e., that, absent the "treatment," the outcome variable in the treated group would have increased or decreased in the same magnitude as in the control group).⁵⁶ Based on the literature and on my knowledge and

⁵³ Mahoney Report, ¶ 121 ("Subscribers who accepted an offer in the Iliad process had a lower share of subscription periods with no benefit usage post-entry relative to pre-entry; in contrast, other groups of subscribers that did not complete cancellation had greater shares of subscription periods with no benefit usage post-entry relative to pre-entry."), ¶ 122 ("These Prime benefit usage patterns across different groups of subscribers that did not complete cancellation suggest that some subscribers exit the Iliad process with the mistaken belief that they successfully cancelled their Prime subscription.").

⁵⁴ Mahoney Report, ¶ 125.

⁵⁵ Wooldridge, J. M. (2016), *Introductory Econometrics: A Modern Approach*, Sixth Edition, Boston, MA: Cengage Learning, p. 410, Table 13.3 ("The general difference-in-differences setup [...] suggests that the [...] average treatment effect (because it measures the effect of the 'treatment' or policy on the average outcome of y), can be estimated in two ways: (1) Compute the differences in averages between the treatment and control groups in each time period, and then difference the results over time [or] (2) Compute the change in averages over time for each of the treatment and control groups, and then difference these changes[.] [...] Naturally, the estimate[d] [effect] does not depend on how we do the differencing, as is seen by simple rearrangement."). Emphasis removed.

⁵⁶ Angrist, J. D. and Jörn-Steffen Pischke (2009), *Mostly Harmless Econometrics: An Empiricist's Companion*, Princeton, New Jersey: Princeton University Press ("Angrist and Pischke (2009)"), p. 230 ("The key identifying

experience in statistical modeling, the choice of an appropriate control group is one of the most fundamental requirements of a difference-in-differences regression.⁵⁷ An appropriate control group must not be “treated” at the same time as the treated group.⁵⁸ In other words, the only difference between the “treated” group and the “control” group must be that the “treated” group received a “treatment” (in this case, the “unsuccessful cancellation”) that the “control” group did not receive.

33. To implement his difference-in-differences regressions, Prof. Mahoney chose two treatment groups and one control group. The two treated groups were the “No Page” group, which consisted of Prime members who “navigated away” from the Cancellation Flow, and the “Prime Central group,” which consisted of Prime members who navigated to the Prime Central page.⁵⁹ Then, Prof. Mahoney chose the “Accept an Offer” group as his “control” group which refers to Prime memberships in which the Prime members “accept[ed] an offer presented by Amazon [during the cancellation process] as an incentive to continue as a Prime subscriber,”⁶⁰ and, according to Prof. Mahoney, likely knew that they did not cancel their Prime membership.⁶¹ These offers included switching from a monthly to a yearly Prime membership (or vice versa),

assumption here is that [the outcome variable] trends would be the same in [the test group and the control group] in the absence of treatment.”). Emphasis removed. *See also* “Difference-in-Difference Estimation,” Columbia Public Health, <https://www.publichealth.columbia.edu/research/population-health-methods/difference-difference-estimation> (“The parallel trend assumption is the most critical of the above the four assumptions to ensure internal validity of DID models and is the hardest to fulfill. It requires that in the absence of treatment, the difference between the ‘treatment’ and ‘control’ group is constant over time. Although there is no statistical test for this assumption, visual inspection is useful when you have observations over many time points. It has also been proposed that the smaller the time period tested, the more likely the assumption is to hold. Violation of parallel trend assumption will lead to biased estimation of the causal effect.”).

⁵⁷ Angrist and Pischke (2009), p. 241 (“Regardless of the group labels, [difference-in-differences] designs always set up an implicit treatment-control comparison. The question of whether this comparison is a good one deserves careful consideration.”).

⁵⁸ Angrist and Pischke (2009), p. 230 (“The key identifying assumption here is that [the outcome variable] trends would be the same in [the test group and the control group] in the absence of treatment.”). Emphasis removed.

⁵⁹ Mahoney Report, ¶ 124 (“I use a difference-in-differences regression in which subscribers who accepted an offer in the Iliad process are the ‘control’ and subscribers who fall in the ‘No Page’ group are the ‘treatment’ to estimate the share of subscribers in the ‘No Page’ group who exited the Iliad process with the mistaken belief that they cancelled their subscription. I run the same regression for the ‘Prime Central’ action group (but, as described above, not for the ‘Remind Me Later’ or ‘Keep My Benefits/Keep My Membership’ groups).”).

⁶⁰ Mahoney Report, ¶ 113.

⁶¹ Mahoney Report, ¶ 122 (“Compared to subscribers who exited the cancellation process by accepting an offer, and therefore likely knew they remained subscribers, other groups exhibit a higher share of periods with no Prime benefit usage post-entry.”).

and discounted plans for students and individuals receiving government assistance.⁶² Prof. Mahoney then compared the incidence of zero Prime shipping benefit usage between the treated and control groups before and after exiting the Cancellation Flow.⁶³

34. Prof. Mahoney's choice of the "Accept an Offer" group as his control group is inappropriate as it is unlikely that the Prime benefits usage in this group would have increased or decreased in the same magnitude as in the "No Page" group (or the "Prime Central" group), which is the key assumption underlying Prof. Mahoney's difference-in-differences regressions. Specifically, the "Accept an Offer" group differed from the "No Page" group (and the "Prime Central" group) not only in the fact that the "Accept an Offer" group did not go through what Prof. Mahoney considers to be an "unsuccessful cancellation" (i.e., not only in the fact that this group did not receive the "treatment") but also in the fact that the "Accept an Offer" group accepted an offer that may have changed their incentives to use Prime benefits (including shipping benefits), likely increasing their usage. For example, one offer that the "Accept an Offer" group could accept was to switch from a monthly to an annual Prime membership (or vice

⁶² On the Marketing page, Prime members with a monthly membership were presented with an option to switch to a yearly membership (or vice versa). Furthermore, Prime members who clicked on the "Are you a student?" link on the Marketing page were directed to a page that provided information about the Prime Student plan. Finally, Prime members who clicked on the "Have an EBT card/receive government assistance?" link on the Marketing page were directed to a page that provided information about the Discounted Prime plan. I relied on information from Mr. Benjamin Goeltz, Senior Product Manager at Amazon Prime, regarding the cancellation process and the active links and buttons in place around August 2022. *See also* Amended Complaint, ¶ 143 ("On the second page of the Iliad Flow, Amazon presented consumers with alternative or discounted pricing, such as the option to switch from monthly to annual payments (and vice-versa), student discounts, and discounts for individuals with EBT cards or who receive government assistance."); Attachment Q of the Amended Complaint, p. 4; Mahoney Report, ¶ 35 ("Amazon next directed consumers who clicked Continue To Cancel on the Marketing Page to the 'Offer Page,' which provided consumers the option to switch to a different Prime plan (e.g., from monthly to annual or vice versa).").

⁶³ Mahoney Report, ¶ 125 ("Therefore, to estimate the share of subscribers who mistakenly believe they have cancelled Prime, I use a difference-in-differences regression analysis to measure the increase in the percentage of subscriptions with zero Prime benefit usage in the 'No Page' group over and above the corresponding increase among subscribers who accepted an offer, while controlling for other factors that may affect Prime benefit usage. I conduct the same analysis for the 'Prime Central' action group."), ¶ 126 ("Using the same logic, establishing that some subscribers in the 'No Page' or 'Prime Central' groups had zero Prime benefit use due to their unsuccessful cancellation requires showing that they had a post-entry increase in zero benefit usage over and above the corresponding change for subscribers who were not 'treated' with unsuccessful cancellation (i.e., those who accepted an offer). This is what the difference-in-differences regression measures."), ¶ 128 ("To measure pre- and post-entry usage, I focus on shipping benefits only.").

versa).⁶⁴ Prime members who switched from a monthly to an annual plan would have saved approximately \$41 per year.⁶⁵ Another offer that the “Accept an Offer” group could accept was to switch to a discounted Prime plan that was half the price of the non-discounted version (this was only available to students and those who received government assistance).⁶⁶ Switching to a discounted plan would have saved approximately \$90 per year.⁶⁷

35. The “Accept an Offer” group is an inappropriate control group because the acceptance of these offers may have increased Prime shipping benefit usage. Prof. Mahoney ignored several factors relating to consumer behavior and decision-making that could influence the level of shipping benefit usage after accepting an offer. First, the savings generated by an offer presented and accepted during the Cancellation Flow could have been used by Prime members to purchase products on Amazon using Prime shipping benefits. Second, price discounts have been found to

⁶⁴ Prime members who had a monthly Prime membership were presented with an offer to switch to a yearly membership. Prime members who had a yearly Prime membership were presented with an offer to switch to a monthly membership. *See* Amended Complaint, ¶ 143 (“On the second page of the Iliad Flow, Amazon presented consumers with alternative or discounted pricing, such as the option to switch from monthly to annual payments (and vice-versa)[.]”); Mahoney Report, ¶ 35 (“Amazon next directed consumers who clicked Continue To Cancel on the Marketing Page to the ‘Offer Page,’ which provided consumers the option to switch to a different Prime plan (e.g., from monthly to annual or vice versa).”).

⁶⁵ In or around August 2022, the monthly Prime membership cost \$14.99 per month, while the yearly membership cost \$139 per year. Switching from a monthly to an annual membership would have saved \$40.88 ($\$40.88 = \$14.99 \times 12 - \139). *See* Attachment Q of the Amended Complaint, pp. 1, 4.

⁶⁶ Prime members who clicked on the “Have an EBT card/receive government assistance?” link on the Marketing page were directed to a page that provided information about the Discounted Prime plan. Around the 2021–2023 time period, this Discounted Prime plan was half the price of the non-discounted version. I relied on information from Mr. Benjamin Goeltz, Senior Product Manager at Amazon Prime, regarding the cancellation process and the active links and buttons in place around August 2022. *See also* Attachment Q of the Amended Complaint, p. 4; “Sign Up for the Discounted Prime Offer,” *Amazon*, [archived] <https://web.archive.org/web/20211025205619/https://www.amazon.com/gp/help/customer/display.html?nodeId=G54BETR9USUFZW5>. Furthermore, Prime members who clicked on the “Are you a student?” link on the Marketing page were directed to a page that provided information about the Prime Student plan. Around the 2021–2023 time period, the Prime Student plan was also half the price of the non-discounted version. I relied on information from Mr. Benjamin Goeltz, Senior Product Manager at Amazon Prime, regarding the cancellation process and the active links and buttons in place around August 2022. *See also* Attachment Q of the Amended Complaint, p. 4; “Prime Student,” *Amazon*, [archived] <https://web.archive.org/web/20220727211839/https://www.amazon.com/amazonprime?primeCampaignId=studentWlpPrimeRedir>.

⁶⁷ The discounted Prime membership was half the price of the non-discounted version ($\$89.94 = \$14.99 \times 12/2$). I relied on information from Mr. Benjamin Goeltz, Senior Product Manager at Amazon Prime, regarding the cancellation process and the active links and buttons in place around August 2022. *See also* Attachment Q of the Amended Complaint, p. 4.

potentially increase customer loyalty and enhance brand experience,⁶⁸ which could also lead to increased usage of Prime benefits, including shipping benefits.

36. Because the “Accept an Offer” group may have had stronger incentives to use Prime benefits, including shipping benefits, it is unlikely that, absent the “unsuccessful cancellation” (i.e., the “treatment”), the “Accept an Offer” group’s Prime shipping benefits usage would have increased or decreased in the same magnitude as the “No Page” group’s (or the “Prime Central” group’s) Prime shipping benefits usage. In fact, consistent with this, Prof. Mahoney’s own analysis shows that, after going through the Cancellation Flow and exiting without cancelling, the use of Prime benefits, including Prime shipping benefits, in the “Accept an Offer” group *increased*.⁶⁹ Therefore, the key assumption of Prof. Mahoney’s difference-in-differences regressions, that absent the “treatment,” Prime shipping benefits usage in the treated group would have increased or decreased *in the same magnitude* as in the control group,⁷⁰ does not hold due to the inappropriate control group. In fact, because even in the absence of what Prof. Mahoney considers an “unsuccessful cancellation” benefit usage in the control group increased, Prof. Mahoney likely overestimated the share of Prime members that exited the Cancellation Flow with the mistaken belief that they had cancelled their Prime membership.

37. Moreover, Prof. Mahoney could have selected a different control group that did not have the same issues as the “Accept an Offer” group. For example, among the six different groups

⁶⁸ Wieseke, J., S. Alavi and J. Habel (2014), “Willing to Pay More, Eager to Pay Less: The Role of Customer Loyalty in Price Negotiations,” *Journal of Marketing*, 78, 6, pp. 17–37, p. 33 (“We find that loyal customers on average obtain greater discounts, which in turn drives customer loyalty.”). *See also*, “Will Discounting Hurt Your Brand,” *Forbes*, July 17, 2020, <https://www.forbes.com/councils/theyec/2020/07/17/will-discounting-hurt-your-brand/> (“A discount can be a way to engage new customer segments or promote new products. When brands get creative with discounts (not every discount has to be the classic percent off), they can enhance the brand experience rather than cheapen it.”).

⁶⁹ Mahoney Report, Figure 28.

⁷⁰ Angrist and Pischke (2009), p. 230 (“The key identifying assumption here is that [the outcome variable] trends would be the same in [the test group and the control group] in the absence of treatment.”). *Emphasis removed. See also* “Difference-in-Difference Estimation,” *Columbia Public Health*, <https://www.publichealth.columbia.edu/research/population-health-methods/difference-difference-estimation> (“The parallel trend assumption is the most critical of the above the four assumptions to ensure internal validity of DID models and is the hardest to fulfill. It requires that in the absence of treatment, the difference between the ‘treatment’ and ‘control’ group is constant over time. Although there is no statistical test for this assumption, visual inspection is useful when you have observations over many time points. It has also been proposed that the smaller the time period tested, the more likely the assumption is to hold. Violation of parallel trend assumption will lead to biased estimation of the causal effect.”).

that Prof. Mahoney identified as having “incomplete cancellations,” he included the “Keep My Benefits/Keep My Membership” group. This group consisted of Prime memberships in which the Prime member exited the Cancellation Flow because they clicked on either the “Keep My Benefits” or “Keep My Membership” buttons. Unlike the “Accept an Offer” group, Prime members with Prime memberships in the “Keep My Benefits/Keep My Membership” group did not accept any offer that could have affected their incentives to use Prime shipping benefits.⁷¹

38. Further, the “Keep My Benefits/Keep My Membership” group had the advantage that these Prime members exited the Cancellation Flow by clicking on a button other than the one indicating they wanted to continue with the cancellation process and, hence, it is unlikely that these Prime members had the mistaken belief that they had cancelled their Prime membership. In his report, Prof. Mahoney claims that Prime members in the “Keep My Benefits/Keep My Membership” group could have been harmed “because they expressed an intent to cancel and never accepted an offer from Amazon, yet continued paying for a Prime subscription.”⁷² This appears to be an unfounded speculation on Prof. Mahoney’s part. As I describe in more detail below, with such a claim Prof. Mahoney wrongly assumed that all Prime members entered the Cancellation Flow with an intent to cancel, and he ignored the intent these Prime members exhibited by actively clicking a button that indicated their desire to leave the cancellation process and keep their Prime memberships.

C. Prof. Mahoney’s Estimation Required Several Unsupported Assumptions, While My Cancellation Survey Provided Direct Evidence of Lack of Confusion Among Prime Members Who Intend to Cancel Prime

39. Prof. Mahoney’s analysis to estimate the share of Prime members allegedly harmed by mistakenly believing that they had canceled their Prime membership implicitly relied on inferences regarding Prime members’ intent or confusion based on data about their behavior while going through the Cancellation Flow (which did not include direct measurements of intent

⁷¹ Even though this control group would have been more appropriate than the one chosen by Prof. Mahoney, other issues with Prof. Mahoney’s difference-in-differences regressions (which I discuss in Section V.C) would have still been present and would have still rendered Prof. Mahoney’s difference-in-differences analysis unreliable.

⁷² Mahoney Report, ¶ 123.

or confusion). Specifically, in order to identify the allegedly confused Prime members, Prof. Mahoney made certain implicit assumptions regarding: (a) the extent to which Prime members in his “No Page” and “Prime Central” groups intended to cancel, experienced an “unsuccessful cancellation,” and could, hence, be considered the “treated” group and (b) the Prime members’ beliefs (or confusion) regarding whether they had actually cancelled their Prime membership when they exited the Cancellation Flow without cancelling Prime. As I explain below, these assumptions are unsupported and multiple alternative explanations for the observed behavior exist that render Prof. Mahoney’s analysis and conclusions unreliable.

40. In contrast to Prof. Mahoney’s analysis, which relied on inferences regarding Prime members’ intent or confusion based on data about their behavior while going through the Cancellation Flow (which does not include direct measurements of intent or confusion), the Cancellation Survey I presented in my opening report did not rely on such inferences and instead provided direct evidence of the cancellation rate among Prime members who intend to cancel, as I explain below after discussing Prof. Mahoney’s unsupported assumptions.⁷³ My Cancellation Survey, which presented respondents with a simulated portion of the Amazon.com website and instructed them to navigate it as they would if they wanted to cancel their Prime membership,⁷⁴ showed that 96.4% of respondents either paused or cancelled their Prime membership when instructed to do so.⁷⁵

41. The first unsupported assumption Prof. Mahoney made in order to identify Prime members who were confused about cancelling was to assume that all Prime members in his “No Page” and “Prime Central” groups had intended to cancel their Prime membership.⁷⁶ However, Prof.

⁷³ The assignment in my opening report related to the Cancellation Survey was to conduct a “survey to assess the extent to which Prime members can locate and complete the desktop version of the Cancellation Flow on Amazon.com as described in the Amended Complaint.” See Wilcox Opening Report, ¶ 11. This assignment did not require the Cancellation Survey to have an experimental design that includes a treatment and a control group, as it did not call for causal conclusions.

⁷⁴ Wilcox Opening Report, ¶ 15 (“I designed and conducted a survey that presented respondents with a simulated portion of the Amazon.com website. Respondents were instructed to navigate the simulated website as they would if they wanted to cancel their Prime membership.”).

⁷⁵ Specifically, 94.7% of respondents of the Cancellation Survey clicked on “End Now” or “End on [DATE]” in the last page of the Cancellation Flow and 1.7% clicked on “Pause on [Date].” See Wilcox Opening Report, Exhibit 10.

⁷⁶ Specifically, 94.7% of respondents of the Cancellation Survey clicked on “End Now” or “End on [DATE]” in the last page of the Cancellation Flow and 1.7% clicked on “Pause on [Date].” See Wilcox Opening Report, Exhibit 10.

Mahoney does not know the intent to cancel of Prime members and his assumption might not hold. Different Prime members may enter the Cancellation Flow with different intentions or different degrees of interest in cancelling their Prime membership, with some Prime members entering the Cancellation Flow with the intent to cancel and others entering the Cancellation Flow as part of exploratory behavior.⁷⁷ For example, a Prime member may enter the Cancellation Flow seeking to elicit a better deal from Amazon on their Prime membership, and then “navigate away” from the Cancellation Flow after reviewing the alternative offers they receive. Indeed, many consumers look for deals and use different strategies to try to get them,⁷⁸

Prof. Mahoney grouped Prime members who started the cancellation process and did not complete it into different groups. None of these groups consider explicitly the possibility that the Prime member did not have the intention to cancel Prime to begin with. See Mahoney Report, ¶ 113 (“As described in Section II.C, a Prime subscriber can take several actions during the cancellation process that result in exiting the Iliad process. On the one hand, if a Prime subscriber reaches the final page of the Iliad process and selects the option to cancel their subscription, the result is a successful cancellation. Any other action leads to an incomplete cancellation, whether intentional or not. Based on my analysis of Amazon’s data covering subscribers who reached the three-page portion of the Iliad process between July 2019 and March 2023, and the subsequent actions such subscribers took, I group actions that result in incomplete cancellations into the following categories: ‘Accept an Offer’—Clicking on a button on the Offer Page to accept an offer presented by Amazon as an incentive to continue as a Prime subscriber. ‘Keep My Benefits/Keep My Membership’—Clicking on the Keep My Benefits button on the Marketing Page, or the Keep My Membership button on either the Offer Page or the Cancellation Page. ‘Remind Me Later’—Clicking on the Remind Me Later button on the Marketing, Offer, or Cancellation pages. ‘No Page’—Navigating away from the Iliad process, e.g., by going to a non-Amazon website or closing the browser, or taking no action on any page of the Iliad process for at least 2 hours. ‘Prime Central’—Clicking on a link or feature in the Iliad process that returns the subscriber to the Prime Central Page (other than clicking on the Keep My Benefits/Keep My Membership or Remind Me Later buttons). ‘Other’—Taking any other action that leads to exiting the Iliad process without completing cancellation”).

⁷⁷ Jenkins, J. L. et al. (2023), “Detecting Goal-Oriented vs. Browsing Users Through Behavior Analysis,” 2023 46th MIPRO ICT and Electronics Convention (MIPRO), pp. 13–18, p. 13 (“One successful technique to improve conversion is to understand user personas and customize the online experience to match user personas. [...] Examples of personas include goal directed users—a user that has the intention of completing a specific task as efficiently as possible—and browsing users—a user who is exploring for information that will ultimately determine the next objective (e.g., to purchase or look elsewhere). Understanding personas can help business build empathy with their users and provide direction on how to optimize the users experience, ultimately increasing user satisfaction and thus conversion.”); Dames, H. et al. (2019), “Searching vs. Browsing—The Influence of Consumers’ Goal Directedness on Website Evaluations,” *Interacting with Computers*, 31, 1, pp. 95–112 (“Users access the Internet not only to pursue specific goals (e.g., searching for information), but also to browse through content in a more exploratory fashion.”); Sánchez-Franco, M. J. and José L. Roldán (2005), “Web Acceptance and Usage Model: A Comparison Between Goal-Directed and Experiential Web Users,” *Internet Research*, 15, 1, pp. 21–48, p. 41 (“Experiential and goal-directed users do not weight extrinsic and intrinsic motives in the same way when on the web. Given the findings, one could argue that goal-directed users are more driven by instrumental factors and focused on their decision-making process while experiential users are more motivated by process.”).

⁷⁸ See “Nearly Three-Quarters of Retail Customers Consider Deals When Choosing Merchants,” *PYMNTS*, March 12, 2024, <https://www.pymnts.com/consumer-insights/2024/nearly-three-quarters-of-retail-customers-consider-deals-when-choosing-merchants> (“PYMNTS Intelligence finds that deal-seeking behavior has long since become mainstream.”). See e.g., “5 Best Browser Extensions that Automatically Find Coupons at Checkout,” *CNBC*, December 20, 2024, <https://www.cnn.com/select/best-browser-extensions-save-money-online->

and when a consumer tries to cancel their membership, it is common for membership services to offer better deals to try to discourage cancellation and retain the customer's business. For example, a variety of consumer-oriented online sources providing tips to consumers recommend to consumers to start the membership cancellation process (even when the consumer does not really intend to cancel the membership), to try to elicit a better deal.⁷⁹ Consistent with this idea, Prof. Mahoney's analysis shows that some Prime members who entered the Cancellation Flow accepted alternative offers presented to them to retain their membership.⁸⁰ Similarly, a Prime member may enter the Cancellation Flow to review their membership management options, such as the differences between pausing and ending their Prime membership, without an intention to cancel at that time, and then "navigate away" from the Cancellation Flow after gathering this information.⁸¹ Indeed, industry research has shown that some consumers value price flexibility

shopping/?msocid=01a75a577c9a67280cb7486b7d8366ac ("Searching for coupons before checking out online can be a hassle. Signing up for email lists, following brands on social media and scouring random websites in hopes that a coupon code will help you score a discount can help, but you have to check back consistently. But thanks to technology, there's an easier way. Coupon browser extensions can save you hundreds of dollars when you shop online — and in some cases even in-store.").

⁷⁹ See "Threaten to Cancel Every Single Subscription," *LifeHacker*, April 3, 2023, <https://lifehacker.com/threaten-to-cancel-every-single-subscription-1850283968> ("If you find a subscription is getting a little too pricy for what it's worth to you, begin the cancellation process. [...] At this point, your attempt to cancel will probably go one of two ways: Either the company will give up and let you end your subscription, or it will start pulling out the promotions. [...] In my experience, newspapers and digital media subscriptions are more likely to reflect the above scenario, insisting on better and better prices until you walk away paying nearly nothing for a subscription that might have once cost you \$15 or more a month. [...] Other companies might give you just one offer before letting you cancel. Adobe is infamous for slicing the cost of its subscription in half as soon as you threaten to cancel. On the flip side, Hulu used to offer a free month when you tried to cancel, but the company offered one Redditor six months of service for \$2.99 a year ago."); "Fake Cancel Your Prime Video Channel Subscriptions for Potential Hidden Discounts," *AFTV News*, February 15, 2024, <https://www.aftvnews.com/fake-cancel-your-prime-video-channel-subscriptions-for-potential-hidden-discounts/> ("Since canceling online and resubscribing takes just a few clicks and there's no interruption in service, it's probably worth trying to see if you can unlock a hidden offer for yourself."); "How to Lower Your Bills by Threatening to Cancel Service," *Lavish Green*, December 8, 2020, <https://lavishgreen.com/article/TDaEGNuBQUMftZVYewXX/how-to-lower-your-bills-by-threatening-to-cancel-service> ("Companies routinely work to retain customers who show an intent to cancel or reduce service by lowering their service costs. As a customer, there really isn't anything to lose when threatening to cancel your subscriptions — the best case scenario is you lower your bills and the worst case is you're told there's nothing that can be done. Below are some of the most prevalent companies that will potentially lower your current rates in order to keep you with them and prevent losing you to their competitors. [...] Cable and Internet Services [...] Cell Phone Service [...] Bank Fees [...] Credit Card Fees and Interest [...] Car Insurance [...] Rent [...] Medical Bills [...] Gym Memberships [...] Newspaper and Magazine Subscriptions [...]").

⁸⁰ Mahoney Report, Figure 27.

⁸¹ See "What Subscribers Want: 71% of Consumers Want Pausing Options," *Recurly*, July 10, 2023, <https://recurly.com/blog/what-consumers-want-pausing-options/>; "Why You Should Consider Offering The Option To Pause Your Subscription Service," *Access PaySuite*, September 19, 2023,

and,⁸² hence, it is reasonable to expect that such consumers will explore and try to understand the different pricing options a membership offers, including pausing options.

42. Finally, even those Prime members who enter the Cancellation Flow with the intent to cancel can be persuaded not to cancel when reminded of the benefits linked to their Prime accounts. For example, some Prime members could decide to no longer cancel (without accepting an alternative offer and, instead, “navigating away” from the Cancellation Flow) because they decide to make use of the benefits they were not previously aware of or because they do not want to give up some benefits they would not have access to without a Prime membership.⁸³

43. Prof. Mahoney did not consider any of these possibilities, and instead assumed that all Prime members in his “No Page” and “Prime Central” groups that entered the Cancellation Flow were determined to cancel their Prime membership. As a result, Prof. Mahoney likely overestimated the number of Prime members who intended to cancel Prime because he likely considered Prime members who did not really intend to cancel within his “No Page” and “Prime Central” groups.

44. Second, Prof. Mahoney assumed that the fact that some Prime members did not actively use their Prime shipping benefits, or used them to a lesser extent, after entering the Cancellation

<https://www.accesspaysuite.com/blog/why-you-should-consider-offering-the-option-to-pause-your-subscription-service/>.

⁸² “Sign Up Now: Creating Consumers—and Business—Value With Subscriptions,” *McKinsey & Company*, May 26, 2021, <https://www.mckinsey.com/capabilities/growth-marketing-and-sales/our-insights/sign-up-now-creating-consumer-and-business-value-with-subscriptions> (“Some successful subscription services will prompt consumers to periodically reset their subscriptions to a higher- or lower-cost plan. The key is to give subscribers enough flexibility in how they use the service to motivate them to stay with it. Survey respondents said that they liked the flexibility of tiered pricing and praised the services that offer it for their ability to accommodate changes in subscribers’ lives. ‘I am a big fan of tiered pricing because it puts me in charge of choosing the plan that best fits my family’s specific needs,’ said one survey respondent. Another cited fluctuating household budgets as a reason for moving between pricing tiers[.]”).

⁸³ One of the purposes of the Cancellation Flow was to ensure that Prime members were aware of all the benefits associated with their Prime membership, as many Prime members might not have been aware of all the available benefits. See Amazon’s Third Response to the Civil Investigatory Demand, Letter from Benjamin Langner, Senior Corporate Counsel, Litigation and Regulatory for Amazon.com, Inc., to Jonathan Cohen, Division of Enforcement for the Federal Trade Commission, “Re: FTC Matter No. 2123050,” October 7, 2022, p. 7 (“One purpose of the online cancellation process is to educate customers about the benefits tied to their Prime account before they cancel and lose access to those benefits. Many Prime members might be aware of one or even several, but not all, of the benefits of Prime or might not realize a benefit they make use of frequently (for example, channel subscriptions) is tied to their Prime account.”).

Flow and exiting it without cancelling their Prime membership indicates that these Prime members mistakenly thought they had cancelled Prime.⁸⁴ However, even though Prof. Mahoney had data on Prime members' use of Prime benefits in general and, in fact, used it as part of the motivation for his difference-in-differences regressions,⁸⁵ when conducting his difference-in-differences regressions he only considered the Prime members use of Prime *shipping* benefits. Prof. Mahoney did not provide a justification for this decision.⁸⁶

45. Furthermore, setting aside Prof. Mahoney's exclusion of Prime benefits other than shipping benefits from his analysis, Prof. Mahoney does not know if Prime members who did not use shipping benefits believed that they cancelled. In fact, his assumption that lack of Prime shipping benefit use is indicative of belief that a Prime member cancelled their membership is unsupported and excludes the possibility that a Prime member may choose to use their Prime shipping benefits only sporadically because of their preferences (and not because they thought they had cancelled their Prime membership).⁸⁷ Consistent with this, according to Prof. Mahoney's analysis, a significant number of memberships reported no use of Prime benefits or Prime shipping benefits even *before* the Prime member entered the cancellation process. For

⁸⁴ Mahoney Report, ¶ 122 ("These Prime benefit usage patterns across different groups of subscribers that did not complete cancellation suggest that some subscribers exit the Iliad process with the mistaken belief that they successfully cancelled their Prime subscription."), ¶ 125 ("I view subscription periods with zero Prime benefit usage after an incomplete cancellation as an indicator of subscribers who intended to cancel.").

⁸⁵ See, e.g., Mahoney Report, Figure 28.

⁸⁶ While discussing his analysis of Amazon data to assess Amazon's cancellation survey, Prof. Mahoney indicated that Prime shipping benefits data is particularly useful to assessing whether a Prime member enrolled intentionally in Prime because "[w]hen Prime subscribers make purchases on Amazon's e-commerce platform, their shipping option defaults to free shipping available to Prime subscribers" while "[o]ther Prime benefits, such as streaming services, require Prime subscribers to go to a dedicated app or Amazon webpage for access, which may make such benefits a less useful signal." See Mahoney Report, ¶ 91. However, Prof. Mahoney provides no justification as to why a Prime member who mistakenly believed they cancelled would avoid using only shipping benefits but may continue to use other benefits such as streaming. In fact, Prof. Mahoney himself acknowledged that "subscribers would not use benefits they think they no longer have" in the context of discussing the usage of all Prime benefits but chose not to analyze all Prime benefits in his difference-in-differences regressions. See Mahoney Report, ¶ 122 and Figure 28.

⁸⁷ See "The Cost of Unused Subscriptions 2024," *Self*, <https://www.self.inc/info/cost-of-unused-paid-subscriptions/#unused-paid-subscription> ("The survey asked the respondents who currently have unused subscriptions which of the 10 most popular paid platforms (non-streaming) they subscribed to but had not used in the past 30 days. Amazon Prime was shown to be the most common paid subscription that they hadn't used in the past 30 days (30.1%). Walmart+ came in second place, with 26.9% of respondents leaving their subscription unused."). Furthermore, according to a 2024 survey, 44% of U.S. customers have not used at least one membership or subscription in a six-month reference period. See "Subscription Graveyard: How Many Unused Subscriptions Are Consumers Currently Paying For?," *YouGov*, July 11, 2024, <https://business.yougov.com/content/50030-subscription-graveyard-how-many-unused-subscriptions-are-consumers-currently-paying-for>.

instance, according to Prof. Mahoney, 26% of his “No Page” group, 22% of his “Prime Central” group, and 49% of his “Accept an Offer” group reported no use of Prime benefits *before* entering the Cancellation Flow.⁸⁸ Similarly, according to Prof. Mahoney, 36% of his “No Page” group, 32% of his “Prime Central” group, and 55% of his “Accept an Offer” group reported no use of Prime shipping benefits *before* entering the Cancellation Flow.⁸⁹

46. In contrast, while Prof. Mahoney relied on unsupported assumptions to identify Prime members who mistakenly believed they cancelled, in my Cancellation Survey presented in my opening report, I directly measured the fraction of respondents who attempted to cancel a Prime membership and either succeeded or failed to do so. In the Cancellation Survey, respondents were instructed to interact with the simulated website as they would if they wanted to cancel their Amazon Prime membership—therefore, respondents would necessarily have the intent to cancel given the instructions to do so.⁹⁰ This is different from Mahoney’s indirect, inferred approach, which required the assumption that respondents in his analysis intended to cancel. However, as discussed above, not all Prime members who enter the Cancellation Flow intend to cancel, as they could have entered the flow to elicit a better deal or to review their membership options, or they could have changed their minds about cancelling once they were reminded of their Prime benefits and alternative plans.

47. Furthermore, in the Cancellation Survey presented in my opening report, I directly observed whether respondents cancelled their Prime membership or not. In contrast, Prof. Mahoney relied on his unsupported assumption that zero Prime shipping benefit usage after exiting the Cancellation Flow without cancelling is indicative of an unsuccessful cancellation. As discussed above, a Prime member may choose to use their Prime shipping benefits only sporadically because of their own preferences, without it reflecting whether or not they were aware of their Prime status.

⁸⁸ Mahoney Report, Figure 28.

⁸⁹ Mahoney Report, Figure 28.

⁹⁰ Wilcox Opening Report, ¶ 23.

VI. Overview and Rebuttal of Prof. Chetty's Relevant Opinions and Analysis

A. Summary of Prof. Chetty's "Think Aloud" Study

48. Prof. Chetty was asked by the FTC to opine on: “(1) whether the design of how Amazon enrolls consumers in Prime during online checkout confuses consumers; (2) whether the design of how Amazon enrolls consumers in Prime during online checkout conveys information on Prime’s material terms (cost, end of free trial period, and renewal terms) that consumers can comprehend; and (3) whether the design of [two specific Prime] cancellation processes confuses consumers.”⁹¹ To that end, Prof. Chetty conducted a “think aloud” study, which is a qualitative user study, with a goal of understanding consumers’ experiences “navigating Prime enrollment within the checkout process and Prime cancellation.”⁹² Specifically, Prof. Chetty stated in her report that the goal of her “think aloud” study “was to ascertain how susceptible users are to selecting options in the Amazon interfaces that did not correspond with their intent—specifically to determine what points of confusion, if any, consumers encounter when navigating these processes.”⁹³

49. To conduct her “think aloud” study, Prof. Chetty, along with a Ph.D. candidate in the Department of Computer Science at the University of Chicago that Prof. Chetty advises, and a website builder (an undergraduate at the University of Chicago who majors in Computer Science), created a website for a fictitious company that sold varieties of candy called CandyForever.⁹⁴ This website included a checkout process on desktop, in which participants could enroll in a fictitious subscription called Premium, and a cancellation process for that subscription.⁹⁵ According to Prof. Chetty, Premium mimics Amazon Prime, the Premium offers

⁹¹ Chetty Opening Report, p. 1.

⁹² Chetty Opening Report, p. 1.

⁹³ Chetty Opening Report, ¶ 289.

⁹⁴ Chetty Opening Report, ¶ 288 (“I conducted this qualitative work with a PhD candidate whom I advise in the Department of Computer Science at the University of Chicago, Brennan Schaffner, and a website builder who is an undergraduate student majoring in Computer Science at the University of Chicago.”), ¶ 291 (“We therefore created a fictional website called CandyForever modeled on the Amazon enrollment detours in its online product checkout and cancellation processes. CandyForever displayed different types of candy as its inventory.”).

⁹⁵ Chetty Opening Report, ¶¶ 291, 294.

during the CandyForever checkout process mimic the Prime offers during the Amazon checkout process, and the Premium cancellation process mimics the Prime cancellation process.⁹⁶

50. Prof. Chetty recruited 30 participants for individual, in-person sessions of this study.⁹⁷ In each session, participants were given a gift card with \$20 preloaded and asked to complete two tasks.⁹⁸

51. First, in the checkout task, participants were instructed to “buy up to \$20 of candy and think-aloud on each screen as they did so,”⁹⁹ and told that “they could keep any remaining

⁹⁶ Chetty Opening Report, ¶ 295 (“In the CandyForever checkout processes, CandyForever Premium equates to Amazon Prime. Thus, the CandyForever checkout has the same upsells to be enrolled in CandyForever Premium that someone shopping for a product on the Amazon website would receive to enroll in Prime. Similarly, to cancel CandyForever Premium, participants must go through the same cancellation processes as they would to cancel Amazon Prime.”). Prof. Chetty indicated that she tested an online checkout process based on the Multi-Page Pipeline (“MPP”), as opposed to one based on the True Single Page Checkout (“TrueSPC”) and that, in the CandyForever checkout process based on the MPP, study participants could see one of three versions of the UPDP, and respondents who saw one of the UPDPs would also see the Shipping Option Select Page (“SOSP”). According to Prof. Chetty, these three different versions of the UPDP versions and the one version of the SOSP were chosen because they are representative of problematic issues suitable for testing with users. *See* Chetty Opening Report, ¶ 89 (“The FTC asked me to assume that there are two types of online checkout processes on desktop devices: (1) the Multi-Page Pipeline (‘MPP’) and (2) the True Single Page Checkout (‘TrueSPC’).”), ¶ 297 (“For enrollment detours, we tested the MPP checkout process with three different versions of the UPDP Prime detour. All three versions had Attachment D as their base. When selecting checkout processes to test, we ensured that we did not select the versions of the pages (SOSP, UPDP and SOSP PDP, and SPC) that I had identified as having the most manipulative designs during my cognitive walkthrough. Instead, we chose processes that had a set of representative problematic issues suitable for testing with users.”), Table 3. Prof. Chetty also indicated that, for the cancellation process, she tested the three-page “Iliad process.” *See* Chetty Opening Report, ¶¶ 216–254 and ¶ 298 (“For cancellation processes, we tested the Iliad process.”). **Note that my Cancellation Survey tested a similar three-page Cancellation Flow. *See* Wilcox Opening Report, ¶¶ 8, 11.** Prof. Chetty did not test all versions of the checkout process offering enrollment in Prime that are at-issue or all versions of the cancellation process that are at-issue. Specifically, Prof. Chetty did not test the TrueSPC and did not test what she refers to as the “Iliad 2.0” cancellation process, even though she alleges that they contained “dark patterns.” *See, e.g.*, Chetty Opening Report, ¶ 169, (“The TSPC also uses dark patterns, such as Confirmshaming and Nagging with the decline option having the words ‘Not right now’. ‘Not right know’ [sic] implies that the consumer can only say no temporarily, not permanently.”), ¶ 275 (“Iliad 2.0 is an improvement over the Iliad since it no longer has the warning icon used in the Iliad but rather the dark patterns identified earlier, including obstruction, persist.”). Prof. Chetty only tested three versions of the checkout process and one version of the cancellation process. *See* Chetty Opening Report, ¶¶ 297–298, Table 3. In addition, I note that the Amazon checkout flow has generally changed over time. *See, e.g.*, Amended Complaint, ¶ 44 (“By October 2022, Amazon modified the circumstances under which prospective members see the UPDP.”), ¶ 53 (“Amazon discontinued the SOSP checkout version by October 2022 [...]”), ¶ 63 (“In October 2022, Amazon replaced SPC with a modified version of the checkout flow it calls True Single Page Checkout.”), ¶ 91 (“In 2022, Amazon modified the mobile checkout enrollment flow.”).

⁹⁷ Chetty Opening Report, ¶¶ 302, 310. Prof. Chetty also recruited three additional participants for a pilot before conducting the full study. *See* Chetty Opening Report, ¶ 310.

⁹⁸ Chetty Backup Materials, “Study Guide.pdf,” pp. 2, 4 (“We will also give you a physical debit card that has \$20 preloaded on it. In a moment, your task will be to please navigate the site and purchase an item[.] [...] Would you like to cancel your CF Premium subscription?”). *Emphasis removed.*

⁹⁹ Chetty Opening Report, ¶ 320.

balance on the gift card after their purchase to motivate them to be mindful of price and their purchase.”¹⁰⁰ After completing this task, participants were asked to explain what they thought in each of the checkout screens, to recall the terms and conditions of the Premium subscription, and, if they had enrolled in Premium, to indicate whether they had enrolled on purpose.¹⁰¹ According to Prof. Chetty, 2 out of 30 participants accidentally enrolled in Premium,¹⁰² 27 out of 30 participants did not read the fine print with terms and conditions of the Premium subscription,¹⁰³ and only 9 out of 30 participants correctly recalled all the terms and conditions of the Premium subscription.¹⁰⁴ Based on these results, Prof. Chetty concluded that “[t]he design of how Amazon enrolls consumers in Prime [...] during online checkout can confuse consumers to unintentionally enroll in Prime because it violates good design principles” and that it “does not convey information on Prime’s material terms [...] in a way that consumers are likely to comprehend.”¹⁰⁵

52. Second, in the cancellation task, participants were told that they had enrolled in Premium (even if the participant had not enrolled in Premium during checkout) and were instructed to

¹⁰⁰ Chetty Opening Report, ¶ 309. According to Prof. Chetty, “[t]he research assistant [...] instructed participants on each task and asked them to ‘think aloud’ and tell us what they were thinking as they were doing the task. The research assistant reminded participants that he could not help them during the tasks but would prompt them to think aloud at any time if they were not already doing so. Participants were also told explicitly that their actions were not under scrutiny and that the sole purpose of the study was to gather feedback on the website for the company and that they were not under time pressure. The minimal prompts used were ‘*What are you thinking now?*’ and ‘*What do you think you would do next?*,’ etc.” See Chetty Opening Report, ¶ 318. Emphasis in original.

¹⁰¹ Chetty Opening Report, ¶ 321 (“At the end of the first task, the research assistant revisited the online checkout with the participant and asked them to explain what they were thinking for each screen. Participants were also asked to recall the terms of the Premium subscription, i.e., the cost of Premium, when and how often they would be charged for Premium, and the fact that Premium was a subscription service. They were also asked if their enrollment choice for Premium matched what they had intended to happen during the task.”).

¹⁰² Chetty Opening Report, ¶ 352 (i) (“Two enrollments in Premium were clearly accidental based on what the participants did on the screen and said verbally during the observations.”). Emphasis removed.

¹⁰³ Chetty Opening Report, ¶ 353 (i) (“27/30 participants did not read the Premium terms shown on the bottom of the UPDP page when completing their first task of purchasing a product. Only 3/30 read the fine print terms and conditions of Premium on the bottom of the UPDP page when going through the first task of purchasing a product.”).

¹⁰⁴ Chetty Opening Report, ¶ 354 (i) (“After completing the first task and going through a reflection of their actions, only 9/30 participants correctly recalled all of the information about the cost, frequency of charges, and nature of Premium as a subscription.”). Emphasis removed.

¹⁰⁵ Chetty Opening Report, ¶ 361.

cancel their Premium subscription.¹⁰⁶ If the participant “had any problem” during this task, “the research assistant encouraged them to keep going with minimal assistance.”¹⁰⁷ After completing the task, the research assistant “reviewed the screens with the participant[s]” and asked them “whether the choices they made aligned with their intentions.”¹⁰⁸ According to Prof. Chetty, 28 out of 30 participants were able to cancel Premium,¹⁰⁹ and 19 out of 30 participants found the cancellation process “onerous.”¹¹⁰ Based on these results, Prof. Chetty concluded that “[t]he design of the [...] cancellation processes can confuse consumers because they contain too many unnecessary steps and use manipulative designs to prevent consumers from cancelling their Prime subscription.”¹¹¹

53. After participants completed the study, the research assistant revealed to them that CandyForever was not a real website, that they would not be charged for Premium or receive the products purchased, and that they would receive a “\$15 bonus card” rather than the money remaining on the gift card provided to them (this amount was higher than any amount that could remain in the gift card at the end of the study).¹¹² The research assistant also informed the

¹⁰⁶ Chetty Opening Report, ¶ 322 (“[O]ur system automatically enrolled the participant in Premium, even if they did not choose to enroll, so that we could initiate our deception protocol for the cancellation task.”), ¶ 323 (“After participants completed the first task and the review, the research assistant then began the deception protocol for the second task to tell the participant that they had enrolled in Premium (regardless of whether they had done so or not). The research assistant emphasized that CandyForever would start billing them if they did not cancel their subscription during the session. In cases where the participant insisted that they did not enroll in Premium, the research assistant said that the site may be buggy to keep up the deception. The research assistant also mentioned that they would not be able to access the CandyForever website from home to cancel the subscription at a later stage.”), ¶ 360 (“Study participants [...] were instructed and incentivized to cancel.”). Chetty Backup Materials, “Study Guide.pdf,” p. 4 (“Would you like to cancel your CF Premium subscription? [...] Can you just try to cancel your Premium subscription on this version of the site right now? They didn’t provide us instructions to do so.”).

¹⁰⁷ Chetty Opening Report, ¶ 324.

¹⁰⁸ Chetty Opening Report, ¶ 324.

¹⁰⁹ Chetty Opening Report, ¶ 355 (iii) (“The 2/30 participants who were unable to complete the cancellation process stopped too soon.”). Emphasis removed. *See also* Chetty Backup Materials, “participant_coding_analysis.xlsx,” Column X.

¹¹⁰ Chetty Opening Report, ¶ 356 (i) (“19/30 participants mentioned that the cancellation screen process was onerous.”). Emphasis removed.

¹¹¹ Chetty Opening Report, ¶ 361 (iii).

¹¹² Chetty Opening Report, ¶ 326 (“After participants completed the study, the research assistant debriefed each participant about the deceptions used—explaining that CandyForever was not a real website, that they would not receive any bills or candy in the mail, and that they would get a \$15 bonus card instead of the remaining money on the gift card. The \$15 was always greater than the amount that would have been remaining on the gift card because the least expensive item on CandyForever cost more than \$5.”).

participants that the study “was for a federal government agency” and explained to them how to opt out of the study.¹¹³

B. Prof. Chetty’s “Think Aloud” Study Is Not Designed to Distinguish Different Sources of Consumer Confusion and to Isolate Confusion Caused by the Alleged “Dark Patterns”

54. Prof. Chetty relied on her “think aloud” study to make causal claims about the effect of certain design aspects of the Amazon website on consumer confusion, Prime enrollments, and Prime cancellations. In particular, Prof. Chetty claims that the goal of her “think aloud” study was “to ascertain how susceptible users are to selecting options in the Amazon interfaces that did not correspond with their intent—specifically to determine what points of confusion, if any, consumers encounter when navigating these processes,”¹¹⁴ and that the “results of the user study allowed [her] to determine what, if any, aspects of the interfaces pose challenges for consumers’ consent to enroll in Prime, consumers’ understanding of Prime’s cost and renewal terms, and enabling consumers to cancel Prime.”¹¹⁵ Based on the results of her “think aloud” study, Prof. Chetty concluded that “the designs of Prime enrollment within the checkout process are confusing to some consumers, who, as a result of dark patterns, unintentionally select an option to enroll in Prime when purchasing a product online,”¹¹⁶ and that “the designs of Prime cancellation are confusing to some consumers, who do not successfully cancel online as a result of dark patterns.”¹¹⁷

55. However, as I explain below, to reach such causal conclusions, Prof. Chetty needed an experimental study design that would allow her to isolate the alleged consumer confusion, accidental and uninformed enrollments in Prime, and difficult or failed cancellations of Prime

¹¹³ Chetty Opening Report, ¶ 326 (“Participants also received a form informing them that this study was for a federal governmental agency and providing them with information on how to opt out of the study.”).

¹¹⁴ Chetty Opening Report, ¶ 289.

¹¹⁵ Chetty Opening Report, ¶ 28.

¹¹⁶ Chetty Opening Report, p. 1.

¹¹⁷ Chetty Opening Report, p. 1. Prof. Chetty uses the term “dark patterns” to refer to allegedly “manipulative designs” that can exist “on websites”. See Chetty Opening Report, p. 1 (“I have twenty years’ experience in human-computer interaction (‘HCI’) and my research and peer-reviewed publications address, among other things, the usability of web interfaces and the presence of manipulative designs (sometimes known as ‘dark patterns’) on websites.”).

caused by the design elements at issue, from the effect of other potential sources of confusion unrelated to the design elements at issue (including certain aspects of how Prof. Chetty designed her “think aloud” study that could have influenced participants’ responses).

56. First, to reach causal conclusions, Prof. Chetty needed an experimental study designed to isolate, for example, the consumer confusion caused by design elements at issue, including those that allegedly contain “dark patterns,” from other sources of consumer confusion unrelated to those design elements.¹¹⁸ ¹¹⁹ Such an experimental study could isolate the effect of the alleged designs and “dark patterns” by, for example, comparing the outcomes of two randomly-assigned groups of participants: one that is presented the original Amazon website, and another that is presented the same Amazon website but without the alleged “dark patterns” or the offending design elements.¹²⁰ For example, Prof. Chetty could have designed a version of the Prime

¹¹⁸ For examples of consumer confusion unrelated to the alleged “dark patterns,” see Walsh, G., T. Hennig-Thurau and V.-W. Mitchell (2007), “Consumer Confusion Proneness: Scale Development, Validation, and Application,” *Journal of Marketing Management*, 23, 7–8, pp. 697–721, pp. 697–698 (“[I]t is no wonder that some consumers find information processing for some tasks confusing [...] confusion pervades almost every decision that consumers make and incidences of consumer confusion have been reported in many different countries and in a host of product markets.”); Conlisk, J. (1996), “Why Bounded Rationality?” *Journal of Economic Literature*, 34, 2, pp. 669–700, p. 670 (“There are many studies in which single individuals are faced with decisions which have objectively correct answers and which test the kinds of reasoning frequently ascribed to agents in economic theory. Do subjects do well in such tests? Often not.”).

¹¹⁹ For a discussion of how experiments can be used to identify causal effects, see Steckel, J. (2018), “Experiments in Litigation,” in *Handbook of Marketing Analytics: Methods and Applications in Marketing Management, Public Policy, and Litigation Support*, eds. Natalie Mizik and Dominique M. Hanssens, Cheltenham, UK: Edward Elgar Publishing Limited, pp. 561–571 (“Steckel (2018)”), p. 562 (“As any social scientist realizes, the standard and most compelling approach for providing evidence of causality is a randomized experiment. [...] [A]ny outcome differences (e.g., sales, judgments) observed at the end of a study are likely to be due to the differences in conditions or treatments and not to differences among the groups that existed prior to the study.”); American Bar Association, Section of Intellectual Property Law (2022), *Trademark and Deceptive Advertising Surveys: Law, Science, and Design*, Second Edition, eds. Shari Seidman Diamond and Jerre B. Swann, Chicago, IL: American Bar Association (“Diamond and Swann (2022)”), p. 99 (“Experimental research in the social sciences (as in the physical sciences) is guided by the principle that to test the effect of a specific stimulus, it is necessary to isolate it from whatever other effects may be present. Based on general guidance drawn from the natural sciences, survey research experts will counsel that a proper control stimulus is identical to the test stimulus in all respects except the specific element to be tested.”), p. 250 (“The best method for determining the cause of a confusion response is a survey-experimental design with a tight control that directly isolates the explanatory feature by showing that the answer changes when the feature is changed or is no longer present.”).

¹²⁰ Steckel (2018), p. 562 (“[T]he standard and most compelling approach for providing evidence of causality is a randomized experiment. [...] If implemented correctly, random assignment creates two or more groups of units that are probabilistically equivalent to each other on the average. Hence any outcome differences (e.g., sales, judgments) observed at the end of a study are likely to be due to the differences in conditions or treatments and not to differences among the groups that existed prior to the study.”); Dix, A. et al. (2004), *Human-Computer Interaction*, Third Edition, Harlow, England: Pearson Prentice Hall, (“Dix et al. (2004)”), p. 329 (“Any experiment has the same

checkout and cancellation processes following what she calls “good design principles” and avoiding what she calls “manipulative designs.”¹²¹

57. Instead, all participants in Prof. Chetty’s “think aloud” study were presented with the same version of the website and the checkout and cancellation processes that, according to Prof. Chetty, contained the alleged “dark patterns.”¹²² Prof. Chetty’s “think aloud” study therefore cannot isolate consumer confusion (if any) caused by the alleged problematic designs and “dark patterns” from consumer confusion (if any) that would remain absent those alleged problematic designs and “dark patterns.”

58. Second, to reach a causal conclusion, Prof. Chetty needed an experimental study design to reduce any influences her study design might have on participants’ responses. As I explain in more detail in Section VI.G, before the start of the cancellation task, the research assistant told some participants that the CandyForever website had a technical problem, that they had enrolled in Premium even if the participant had chosen not to do so during checkout,¹²³ and that they would be charged for Premium unless they cancelled it during the study session.¹²⁴ Such information may have influenced participants’ responses when asked about their experience in the CandyForever website, making them more prone to providing negative comments and

basic form. The evaluator chooses a hypothesis to test, which can be determined by measuring some attribute of participant behavior. A number of experimental conditions are considered which differ only in the values of certain controlled variables. Any changes in the behavioral measures are attributed to the different conditions.”).

¹²¹ Chetty Opening Report, ¶ 361.

¹²² Participants in Prof. Chetty’s “think aloud” study were presented with three different version of the checkout flow, which differed in the UPDP included, and whether they included the SOS. *See* Chetty Opening Report, ¶ 297 (“For enrollment detours, we tested the MPP checkout process with three different versions of the UPDP Prime detour.”), Table 3. Prof. Chetty claims that all these versions of the checkout flow included the alleged “dark patterns.” *See* Chetty Opening Report, p. 1 (“[T]he designs of Prime enrollment within the checkout process are confusing to some consumers, who, as a result of dark patterns, unintentionally select an option to enroll in Prime when purchasing a product online.”) and ¶ 297 (“[W]e chose processes that had a set of representative problematic issues suitable for testing with users.”). Participants in Prof. Chetty’s “think aloud” study were also presented with one version of the cancellation process. *See* Chetty Opening Report, ¶ 298 (“For cancellation processes, we tested the Iliad process.”). Prof. Chetty claims that this cancellation process included the alleged “dark patterns.” Chetty Opening Report, p. 1 (“[T]he designs of Prime cancellation are confusing to some consumers, who do not successfully cancel online as a result of dark patterns.”).

¹²³ Chetty Opening Report, ¶ 323 (“After participants completed the first task and the review, the research assistant then began the deception protocol for the second task to tell the participant that they had enrolled in Premium (regardless of whether they had done so or not). [...] In cases where the participant insisted that they did not enroll in Premium, the research assistant said that the site may be buggy to keep up the deception.”).

¹²⁴ Chetty Opening Report, ¶ 304 (“[W]e decided to tell participants that [...] they would be billed if they did not cancel within the study session[.]”), ¶ 323 (“The research assistant also mentioned that they would not be able to access the CandyForever website from home to cancel the subscription at a later stage.”).

assessments. An experimental design would have been helpful in addressing this problem by making it possible to separate (a) the effect of the allegedly problematic designs and “dark patterns” on participants’ perception of the CandyForever website from (b) the effect of telling participants that the CandyForever website had a technical problem and that participants would be charged for Premium if they did not cancel it. Without an experimental design, the “think aloud” study cannot isolate the effect (if any) of the alleged problematic designs and “dark patterns” that Prof. Chetty sought to assess.

59. Given the design of her “think aloud” study, Prof. Chetty cannot attribute the purportedly accidental, uninformed enrollments or the purportedly difficult or failed cancellations to the alleged “dark patterns” and design elements that Prof. Chetty claims caused confusion, because these outcomes may have also occurred absent the design elements at issue. Prof. Chetty’s conclusions that allegedly problematic design elements, including those that involved the alleged “dark patterns” on Amazon’s website, caused confusion, accidental or uninformed enrollments, and difficult or failed cancellations therefore cannot be supported by her study.

C. Prof. Chetty’s “Think Aloud” Study Relied on an Unrepresentative and Small Sample of Participants, and Therefore Its Results Are Not Generalizable to the Population of Interest and Are Not Reliable

1. The “Think Aloud” Study Relied on a Sample of Participants Who Are Not Representative of Amazon Shoppers or Prime Members

60. The results of a study cannot be generalized to the population of interest if the study relied on a sample that is not representative of that population.¹²⁵ Therefore, in order to yield results

¹²⁵ Kaye, D. H. and D. A. Freedman (2011), “Reference Guide on Statistics,” in *Reference Manual on Scientific Evidence*, Third Edition, Washington, D.C.: The National Academies Press, pp. 213–302, <https://nap.nationalacademies.org/read/13163/chapter/7> (“Kaye and Freedman (2011)”), p. 217 (“[I]nferences from the part to the whole are justified when the sample is representative.”). *See also* Freeman, D., R. Pisani and R. Purves (2007), *Statistics*, Fourth Edition, New York, NY: W.W. Norton & Company, Inc., pp. 333–334 (“An investigator usually wants to generalize about a class of individuals. This class is called the population. [...] Only part of it can be examined, and this part is called the sample. Investigators will make generalizations from the part to the whole. In more technical language, they make inferences from the sample to the population. [...] [T]here are some numerical facts about the population which the investigators want to know. Such numerical factors are called parameters. [...] Estimating parameters from the sample is justified when the sample represents the population.”) emphases removed; Findley, M., K. Kikuta and M. Denly (2021), “External Validity,” *Annual Review of Political*

that can be generalized, a study must rely on a sample with characteristics that resemble the characteristics of the population of interest.¹²⁶

61. Prof. Chetty relied on her “think aloud” study to draw conclusions about Amazon shoppers and Prime members.¹²⁷ However, as I explain below, Prof. Chetty’s “think aloud” study relied on a sample of participants who are not representative of either of those populations of interest.

62. First, the goal of Prof. Chetty’s “think aloud” study was to evaluate consumers’ experience as they navigate “Prime enrollment within the checkout process” and as they navigate the cancellation process for Prime.¹²⁸ The relevant populations for each of these processes are different. The relevant population for the “Prime enrollment within the checkout process” consists of customers who could have seen and interacted with the Universal Prime Decision Page (“UPDP”), or Amazon shoppers who are not Prime members.¹²⁹ Meanwhile, the relevant

Science, 24, pp. 365–393, <https://www.annualreviews.org/docserver/fulltext/polisci/24/1/annurev-polisci-041719-102556.pdf> (“Findley et al. (2021)”), p. 374 (“In fact, the lack of a representative sample [...] can cause biases related to external validity[.]”), p. 375 (“Although these internal validity biases are well known, less acknowledged is the bias due to the lack of external validity—henceforth, external validity bias [...] With a randomized trial or equivalent designs, it is possible to unbiasedly estimate the [sample average treatment effect]. The latter, however, does not perfectly correspond to our goal, the [population average treatment effect] or [the target population average treatment effect]. The gap between the [sample average treatment effect] and [the population average treatment effect/target population average treatment effect] is represented by the external validity biases[.]”).

¹²⁶ Dix et al. 2004, p. 329 (“The choice of participants is vital to the success of any experiment. In evaluation experiments, participants should be chosen to match the expected user population as closely as possible. Ideally, this will involve experimental testing with the actual users but this is not always possible. If participants are not actual users, they should be chosen to be of a similar age and level of education as the intended user group. Their experience with computers in general, and with systems related to that being tested, should be similar, as should their experience or knowledge of the task domain.”); Findley et al. (2021), p. 379 (“Random sampling provides a powerful solution to external validity because it ensures representativeness of the sample on observable and unobservable dimensions of a population. Representativeness can be defined in various ways (Kruskal & Mosteller 1979), but here we use it to characterize a sample that unbiasedly represents a population.”); Alavi, M. et al. (2024), “Achieving a Representative Sample in Health Research,” *Nurse Education in Practice*, 78, 103986, pp. 1–3, p. 1 (“A representative sample is crucial for establishing external validity. Including a representative and unbiased sample in research enhances the reliability and validity of the obtained information and estimations regarding the population under study. This is because a representative sample encompasses the diverse characteristics of the target population, providing a more accurate reflection of its nature (Mohapatra and Chamola, 2020).”).

¹²⁷ Chetty Opening Report, p. 1.

¹²⁸ Chetty Opening Report, p. 1.

¹²⁹ Amended Complaint, ¶¶ 35–36 (“Consumers who are not Prime members visit Amazon’s website—www.Amazon.com—to shop. [...] Amazon presents all consumers who are not Prime subscribers with at least one opportunity (also known as an ‘upsell’)—and often several opportunities—to join Prime before those consumers place their order on the final checkout page.”). Note that not all online shoppers would have been exposed to the UPDP. Specifically, online shoppers who did not shop on Amazon or online shoppers who already had a Prime membership would not have been exposed to the UPDP. Therefore, a sample representative of online shoppers would not match the relevant population because it would include respondents who would not have seen and interacted with the UPDP.

population for the cancellation process consists of customers who could have seen and interacted with the cancellation process, or Amazon Prime members.¹³⁰ The sample of participants in Prof. Chetty's "think aloud" study cannot be simultaneously representative of both populations of interest.

63. Exhibit 1 compares the age and gender composition of Prof. Chetty's "think aloud" study sample with that of Amazon shoppers without a Prime membership and that of Prime members using data from the Cancellation Survey presented in my opening report.¹³¹ As Exhibit 1 shows, the age and gender composition of (a) Amazon shoppers without a Prime membership and (b) Prime members are different. Moreover, both are different from the age and gender composition of Prof. Chetty's "think aloud" study sample. For instance, the share of females among Prof. Chetty's "think aloud" study participants is lower than that among Prime members in the data from the Cancellation Survey I presented in my opening report.¹³² Similarly, the share of people

¹³⁰ Amended Complaint, ¶ 7 ("Amazon also knowingly complicated the cancellation process for Prime subscribers who sought to end their membership. [...] [T]he primary purpose of the Prime cancellation process was not to enable subscribers to cancel, but rather to thwart them."), ¶ 13 ("[...] Amazon advertised, marketed, distributed, or sold a paid subscription service, Prime, that gives subscribers through the United States access to additional services.").

¹³¹ The data from the Cancellation Survey was obtained using "click-balancing," a technique that "increase[s] the representativeness of a survey [sample]." See Diamond and Swann (2022), p. 212 ("One common technique to increase the representativeness of a survey is to include quotas for some basic demographics, such as age and gender. For example, if the purchasers of a product are typically one-third men and two-thirds women, the survey can include a forced quota to ensure that the sample surveyed matches that demographic split. Another approach is to use a pre-planned quota to ensure that the persons screened for the survey match the demographics of the general population as indicated by the U.S. census."), p. 310 ("In essence, click-balancing is a form of sample matching that partially corrects for selection and nonresponse bias by insisting that those beginning the screening process match some predefined demographic characteristics (generally census representation)."). This method starts by collecting an inbound sample representative of the U.S. population (in the case of the Cancellation Survey, the inbound sample was representative of the U.S. population in terms of age, gender, and census region) and then filters it to obtain a sample representative of the relevant population. The questions in the screening section of the Cancellation Survey allow filtering of the inbound sample to obtain a sample representative of Prime members and also a sample of Amazon shoppers without a Prime membership. See Wilcox Opening Report, ¶ 21.

¹³² In addition, Prof. Chetty ran a pilot study with three participants in order to "1) test out the study protocol, 2) ensure participants were able to complete the tasks we set out and understand our instructions, and 3) ensure the data we were collecting answered the research questions we set out." See Chetty Opening Report, ¶ 336. The characteristics of these study participants were not representative of Prof. Chetty's target population, which included "participants from a range of age groups, income ranges, and education levels to match the demographics of Amazon shoppers" and were to exhibit a range of "experiences online shopping matching the US population" and a range of "[familiarity] with shopping on Amazon." See Chetty Opening Report, ¶ 328. Specifically, the three pilot study participants were all male, had annual incomes of over \$75,000 (two out of three had incomes of over \$150,000) and shopped online only "[o]nce every two weeks" or "[o]nce a month or once every few months." Additionally, two out of three participants were unemployed. See Chetty Backup Materials, "ProfileSheet_withoutPII.xlsx," Columns B, D, F, G, J; Chetty Opening Report, ¶ 331.

aged 50 to 64 among Prof. Chetty’s “think aloud” study participants is higher than that among Amazon shoppers without a Prime membership and that among Prime members in the data from the Cancellation Survey I presented in my opening report.

64. These differences limit Prof. Chetty’s ability to generalize the results of her “think aloud” study to the populations of interest because results generated by individuals that differ on characteristics that may be correlated with what is being measured may systematically differ from what would be observed in the population of interest.¹³³

¹³³ Kaye and Freedman (2011), p. 222–223 (“Any study must be conducted on certain subjects, at certain times and places, and using certain treatments. To extrapolate from the conditions of a study to more general conditions raises questions of external validity. [...] Confidence in the appropriateness of an extrapolation cannot come from the experiment itself. It comes from knowledge about outside factors that would or would not affect the outcome.”); Shorten, A. and C. Moorley (2014), “Selecting the sample,” *Evidence-Based Nursing*, 17, 2, pp. 32–33, <https://ebn.bmj.com/content/17/2/32.long> (“Potential differences in sample characteristics such as age, gender, [] income, education and employment could be unique to the sample and fail to answer the question for [the population].”); Dix et al. 2004, p. 329 (“The choice of participants is vital to the success of any experiment. In evaluation experiments, participants should be chosen to match the expected user population as closely as possible. Ideally, this will involve experimental testing with the actual users but this is not always possible. If participants are not actual users, they should be chosen to be of a similar age and level of education as the intended user group. Their experience with computers in general, and with systems related to that being tested, should be similar, as should their experience or knowledge of the task domain.”); Findley et al. (2021), p. 374 (“In fact, the lack of a representative sample [...] can cause biases related to external validity [.]”), p. 375 (“Although these internal validity biases are well known, less acknowledged is the bias due to the lack of external validity—henceforth, external validity bias[.] With a randomized trial or equivalent designs, it is possible to unbiasedly estimate the [sample average treatment effect]. The latter, however, does not perfectly correspond to our goal, the [population average treatment effect] or [the target population average treatment effect]. The gap between the [sample average treatment effect] and [the population average treatment effect/target population average treatment effect] is represented by the external validity biases[.]”), p. 379 (“Random sampling provides a powerful solution to external validity because it ensures representativeness of the sample on observable and unobservable dimensions of a population. Representativeness can be defined in various ways (Kruskal & Mosteller 1979), but here we use it to characterize a sample that unbiasedly represents a population.”).

Exhibit 1 Demographics Comparison

	Participants in "Think Aloud" Study	Amazon Shoppers Without Prime Membership in Cancellation Survey ^{[1][2][3]}	Prime Members in Cancellation Survey ^{[3][4]}
Age			
18–34	33%	24%	41%
35–49	20%	19%	28%
50–64	37%	25%	20%
65 or older	10%	31%	11%
Sample Size	30	283	530
Gender			
Male	50%	50%	43%
Female	50%	49%	56%
Sample Size	30	283	530

Source: Chetty Backup Materials, "ProfileSheet_withoutPII.xlsx"; Cancellation Survey 10/10/24–10/14/24

Note:

[1] Data for Amazon shoppers are filtered to respondents who completed S70 in the screening questions. Amazon shoppers are those who say they have shopped on Amazon sometime in the past 12 months. 4 respondents did not know or were not sure if they had shopped on Amazon and were excluded from the Amazon shoppers shares.

[2] Data for non-Prime members are filtered to respondents who completed S80 in the screening questions. Non-Prime members are those who say they do not currently have an Amazon Prime membership, whether it be their own or one shared with members of their household. 3 respondents did not know or were not sure if they had Prime memberships and were excluded from the Non-Prime members shares.

[3] Data for age demographics are filtered to respondents who completed S30 in the screening questions. Data for gender demographics are filtered to respondents who completed S40 in the screening questions. Gender responses included Male, Female, and Non-Binary. The Male and Female shares are calculated without excluding Non-Binary responses.

Percentages may not add up to 100 due to excluded Non-Binary responses.

[4] The final sample from the Cancellation Survey was limited to completed, qualified responses.

65. Second, Prof. Chetty did not show that her sample of participants matched the characteristics she aimed to match during recruitment. Prof. Chetty claims that she recruited “a diverse sample of participants,”¹³⁴ including “participants from a range of age groups, income ranges, and education levels to match the demographics of Amazon shoppers,”¹³⁵ participants “with experiences online shopping matching the U.S. population,”¹³⁶ and “a range of users who

¹³⁴ Chetty Opening Report, ¶ 327.

¹³⁵ Chetty Opening Report, ¶ 328.

¹³⁶ Chetty Opening Report, ¶ 328.

were familiar and less familiar with shopping on Amazon.”¹³⁷ However, Prof. Chetty did not present a comparison between the age, income, and education levels of her sample and those of Amazon shoppers, or a comparison between the “experiences [with] online shopping” between her sample and that of the U.S. population. Hence, Prof. Chetty did not show that her sample of participants matched in characteristics to the populations she intended to match. Exhibit 2 compares the age and gender composition of Prof. Chetty’s “think aloud” study sample with that of the U.S. population and that of Amazon shoppers using data from the 2020 U.S. Census (the most recent census data available) and my Cancellation Survey. As Exhibit 2 shows, the age and gender composition of Prof. Chetty’s “think aloud” study sample are different from those of the U.S. population and the population of Amazon shoppers.

¹³⁷ Chetty Opening Report, ¶ 328.

Exhibit 2
Demographics Comparison

	Participants in "Think Aloud" Study	2020 U.S. Census ^[1]	Amazon Shoppers in Cancellation Survey ^{[2][3]}
Age			
18–34	33%	29%	33%
35–49	20%	24%	25%
50–64	37%	25%	24%
65 or older	10%	22%	18%
Sample Size	30		1,129
Gender			
Male	50%	49%	47%
Female	50%	51%	52%
Sample Size	30		1,129

Source: Chetty Backup Materials, "ProfileSheet_withoutPII.xlsx"; 2020 U.S. Census; Cancellation Survey 10/10/24–10/14/24

Note:

[1] Shares for age and gender are calculated from the population that is 18+ in age.

[2] Data for Amazon shoppers are filtered to respondents who completed S70 in the screening questions. Amazon shoppers are those who say they have shopped on Amazon sometime in the past 12 months. 4 respondents did not know or were not sure if they had shopped on Amazon and were excluded from the Amazon shoppers shares.

[3] Data for age demographics are filtered to respondents who completed S30 in the screening questions. Data for gender demographics are filtered to respondents who completed S40 in the screening questions. Gender responses included Male, Female, and Non-Binary. The Male and Female shares are calculated without excluding Non-Binary responses. Percentages may not add up to 100 due to excluded Non-Binary responses.

66. Third, because Prof. Chetty used the same sample of participants for the checkout task and for the cancellation task of her “think aloud” study, the sample of participants in the cancellation task is not representative of Prime members attempting to cancel Prime. Further, in her study, Prof. Chetty asked *all* participants to go through the cancellation task immediately after going through the checkout task in which they could enroll in Premium. It is highly unlikely that *all* Amazon Prime members would attempt to cancel immediately after enrolling in the manner Prof. Chetty operationalizes in her study, but rather with some time lag and after interacting with the

Amazon website.¹³⁸ Participants in Prof. Chetty's "think aloud" study, therefore, were less familiar with the CandyForever website than Prime members would be with the Amazon website when attempting to cancel their memberships. As a consequence, the behavior of Prof. Chetty's study participants during the cancellation task was likely not representative of the behavior of Prime members that could be interested in cancelling their Prime memberships. Hence, the results of Prof. Chetty's "think aloud" study with regards to the cancellation process cannot be generalized to the population of Prime members, which is the relevant population for the assessment of the Prime cancellation process.

67. Finally, because CandyForever was a fictitious website and Premium was a fictitious subscription, participants in Prof. Chetty's "think aloud" study were naturally less familiar with CandyForever and Premium than Amazon shoppers or Prime members would be with Amazon and Prime.¹³⁹ As a consequence, the behavior of Prof. Chetty's study participants during the checkout task or the cancellation task was likely not representative of the behavior of Amazon shoppers without a Prime membership considering enrolling in Prime during the Amazon checkout process or of the behavior of Prime members attempting to cancel their Prime membership.

¹³⁸ Consistent with Prime members not immediately cancelling their memberships after enrolling, according to a third-party source, 95 percent of Prime members report intending to renew their membership. *See* "Membership Survey: Walmart+ vs Amazon Prime – Get Ready to Rumble," *Evercore ISI*, November 8, 2024, p. 8. Furthermore, 97 percent of Prime members actually renew their memberships. *See* "Amazon Prime Retention Rates in the United States Between 1st Quarter 2016 and 1st Quarter 2023," *Statista*, <https://www.statista.com/statistics/1251860/amazon-prime-retention-rates/>.

¹³⁹ Out of the 30 participants in Prof. Chetty's "think aloud" study, 27 said that they shopped on Amazon, and out of those 27, 22 said Amazon was one of their most frequently visited online stores. Thus, these participants were more familiar with the Amazon website than with the CandyForever website (a website they had not seen prior to the study) and were likely more familiar with Amazon Prime than with CandyForever Premium (a subscription program they had not heard of prior to the study). *See* Chetty Backup Materials, "ProfileSheet_withoutPII.xlsx," Columns H, I. Furthermore, the fact that many respondents in the "think aloud" study shopped on Amazon and would have some familiarity with the Amazon website is consistent with third-party sources. *See also* "Here's Why More Americans Than Ever Now Shop at Amazon," *MarketWatch*, <https://www.marketwatch.com/story/heres-why-a-whopping-83-of-american-households-now-shop-at-amazon-07bed254> ("A record 83% of U.S. households now shop with Amazon, which analysts say is directly related to the company's push into everyday essentials").

2. The “Think Aloud” Study Relied on a Very Small Sample of Participants

68. Prof. Chetty’s “think aloud” study relied on a sample of only 30 participants.¹⁴⁰ Further, during the checkout task, Prof. Chetty subdivided the sample into three groups of 10 participants, where each group was presented with a different version of the CandyForever checkout process.¹⁴¹

69. Small samples, such as the one used by Prof. Chetty in her “think aloud” study, limit a study’s ability to reach generalizable conclusions, and they may fail to provide robust results because the level of random error increases as sample size decreases.¹⁴² For instance, small samples can lead to unreliable estimates of means, medians, and other statistical metrics, and to apparently contradictory conclusions that depend on the specific sample used in the analysis.¹⁴³

70. However, despite these limitations of small samples, Prof. Chetty relied on a sample of only 30 participants to reach conclusions about the effect of the alleged “dark patterns,” if any, on the behavior of *all* Amazon shoppers and *all* Prime members.¹⁴⁴ Even Prof. Chetty

¹⁴⁰ Chetty Opening Report, ¶ 331.

¹⁴¹ Chetty Opening Report, ¶ 293 (“Moreover, we wanted to test versions of the online product checkout process with Prime detours, and cancellation processes that were no longer displayed on the Amazon website at the time of our study. We also wanted to control which version a particular user would see during the study. During the study, we ensured that a third of all participants saw each version of the Prime detours in the checkout process we were testing”), ¶ 299 (“Because we had three versions of the UPDP page and the SOSP page, the research assistant selected which version of the enrollment flow to test for each participant using the hidden settings page.”).

¹⁴² Ridgway, J. (2016), “Implications of the Data Revolution for Statistics Education,” *International Statistical Review*, 84, 3, pp. 528–549, <https://onlinelibrary.wiley.com/doi/epdf/10.1111/insr.12110>, p. 536 (“Data from small samples lend themselves readily to questions about (say) the difference between means, but not to robust estimates of effect sizes.”); Kaye and Freedman (2011), p. 246 (“Generally, increasing the size of the sample will reduce the level of random error (‘sampling error’).”).

¹⁴³ Cao, Y., R. Chen and A. Katz (2024), “Why Is a Small Sample Size Not Enough?” *The Oncologist*, 29, 9, pp. 761–763, <https://pmc.ncbi.nlm.nih.gov/articles/PMC11379640/pdf/oyae162.pdf>, p. 761 (“Our simulated examples demonstrate that sample sizes play important roles in clinical research. The results and conclusions, in terms of estimates of means, medians, Pearson correlations, chi-square test, and P values, are unreliable with small samples.”), p. 762 (“With small sample sizes [...] there can be random variation in the results; thus, multiple studies of small sample sizes might provide different/opposite findings. With larger sample sizes, such random variation would be reduced and thereby provide more valid results.”).

¹⁴⁴ Chetty Opening Report, p. 1, ¶ 289 (“The goal of this study was to ascertain how susceptible users are to selecting options in the Amazon interfaces that did not correspond with their intent—specifically to determine what points of confusion, if any, consumers encounter when navigating these processes.”), ¶ 312 (“The main considerations for creating the study protocol were to answer the following research questions: (i) How do users enroll in Amazon Prime via online checkout? This included asking what points of confusion exist in this process, if any. (ii) How do users cancel their Amazon Prime subscription?”).

acknowledges that studies like her “think aloud” study “are generally not meant to generate large quantitative effects or significant statistical measures” and instead “are meant to produce in-depth insights and anecdotes of users’ lived experiences to identify interface strengths and weaknesses.”¹⁴⁵ Prof. Chetty also acknowledges that the “number of participants who exhibit a particular phenomenon” in this type of study is “only meant to provide a sense of the prevalence of certain themes in the data [not in a larger population], as opposed to statistically significant evidence.”¹⁴⁶ Nevertheless, Prof. Chetty’s conclusions do not reflect these known limitations.

71. Given its small sample of participants, Prof. Chetty’s “think aloud” study cannot be used to draw reliable conclusions about the experiences of the population of Amazon shoppers or the population of Prime members navigating the Amazon enrollment and cancellation processes that Prof. Chetty tested in her study.

D. Prof. Chetty’s “Think Aloud” Study Measured Confusion Relying on Participants’ Recollection Rather than Participants’ Understanding of the Terms and Conditions

72. Prof. Chetty’s “think aloud” study attempted to measure consumer confusion by asking participants to recall the terms and conditions of the Premium subscription after the checkout task. Specifically, after participants completed the checkout task, Prof. Chetty’s research assistant asked participants about the terms and conditions of the Premium subscription while showing them the CandyForever home page, which does not present such terms and conditions.¹⁴⁷

¹⁴⁵ Chetty Opening Report, ¶ 75. *See also* Chetty Opening Report, ¶ 332 (“[A] qualitative data analysis is not meant to produce statistically significant results[.]”).

¹⁴⁶ Chetty Opening Report, ¶ 75.

¹⁴⁷ Chetty Backup Materials, “Study Guide.pdf,” p. 3 (“[Order Review Page: Don’t place order] So then you pressed Place Order, which I won’t actually do so as to not double order your candy. Let’s just go back to the home page. During the purchasing process, there were some notes about CF Premium—Did you see the options for CF Premium? How much did Premium cost? When would you be charged that amount? How often?”). *Emphasis Removed*; Chetty Backup Materials, “3.CF-inventory-page-a.png,” “4.CF-inventory-page-b.png,” “5.CF-inventory-page-c.png.” *See also* Chetty Opening Report, ¶ 321 (“At the end of the first task, the research assistant revisited the online checkout with the participant and asked them to explain what they were thinking for each screen. Participants were also asked to recall the terms of the Premium subscription, i.e., the cost of Premium, when and how often they would be charged for Premium, and the fact that Premium was a subscription service.”).

73. Based on their responses, Prof. Chetty determined whether participants (a) correctly recalled the cost of Premium,¹⁴⁸ (b) correctly recalled when and how often they would be charged for Premium,¹⁴⁹ and (c) understood the nature of Premium.¹⁵⁰

¹⁴⁸ After the checkout task, participants were asked to recall the monthly price of Premium and were coded by Prof. Chetty as “Knew Cost of Premium” if they could cite a price that was within \$1 of the actual price. Chetty Opening Report, ¶ 321 (“At the end of the first task, the research assistant revisited the online checkout with the participant and asked them to explain what they were thinking for each screen. Participants were also asked to recall the terms of the Premium subscription, i.e., the cost of Premium, when and how often they would be charged for Premium, and the fact that Premium was a subscription service.”), ¶ 343 (“For ‘Whether Knew Premium Cost’, we applied a code if the participant could state the monthly price of Premium that was advertising during the checkout process.”), ¶ 353 (iii) (“Note, if participants gave an answer that was within a \$1 of the Premium costs, we considered that correct.”).

¹⁴⁹ After the checkout task, participants were asked to “recall the terms of the Premium subscription,” including “when and how often they would be charged for Premium.” Chetty Opening Report, ¶ 321 (“At the end of the first task, the research assistant revisited the online checkout with the participant and asked them to explain what they were thinking for each screen. Participants were also asked to recall the terms of the Premium subscription, i.e., the cost of Premium, when and how often they would be charged for Premium, and the fact that Premium was a subscription service.”).

¹⁵⁰ Prof. Chetty does not define the meaning of “nature of Premium” in her report. I understand that Prof. Chetty may use the expression “nature of Premium” to refer to Premium’s benefits and the fact that Premium is a subscription service. For example, Prof. Chetty describes the 9 out of 30 participants who were coded for “Did *Not* Understand Nature of Premium” as lacking a general understanding of Premium and its benefits. Chetty Opening Report, ¶ 354 (iv) (“9/30 participants had a lack of an understanding of what Premium was more generally. For example, P15 conflated the benefits of Premium with the premise of CandyForever offering candies from around the world.”); Chetty Backup Materials, “participant_coding_analysis.xlsx,” Column N. Prof. Chetty uses the expression “nature of Premium” to refer to the fact that Premium was a subscription. Chetty Opening Report, ¶ 353 (iv) (“Four of the 10 participants who were enrolled but uninformed did not understand the general terms and nature of a Premium subscription. For instance, P7 enrolled in Premium on the UPDP page and did not know the cost of Premium and seem to think that the Premium meant they would get a recurring order of their candy order shipped to them.”), ¶ 354 (i) (“After completing the first task and going through a reflection of their actions, only 9/30 participants correctly recalled all of the information about the cost, frequency of charges, and nature of Premium as a subscription.”). Prof. Chetty also uses the expression “nature of Premium” to refer to the benefits of the Premium subscription. Chetty Opening Report, ¶ 344 (“If a participant had the code ‘Enrolled’ and not any of (‘Did Not Know Cost of Premium,’ ‘Did Not Know Charge Timeline of Premium,’ or ‘Did Not Understand Benefits of Premium’), we applied a code ‘Informed Enrollment.’”); Chetty Backup Materials, “participant_coding_analysis.xlsx,” Columns C, M, N, P, T. Participants were asked to “recall the terms of the Premium subscription,” including “the fact that Premium was a subscription service” and the benefits of premium. Chetty Opening Report, ¶ 321 (“At the end of the first task, the research assistant revisited the online checkout with the participant and asked them to explain what they were thinking for each screen. Participants were also asked to recall the terms of the Premium subscription, i.e., the cost of Premium, when and how often they would be charged for Premium, and the fact that Premium was a subscription service.”), ¶ 343 (“For ‘Whether Knew Premium Cost’, we applied a code if the participant could state the monthly price of Premium that was advertising during the checkout process. All other participants were coded as ‘Did not know the cost of Premium’. A similar coding process was applied for whether participants knew the benefits of Premium.”).

74. By asking participants about the terms and conditions of Premium while they were unable to review that information, Prof. Chetty’s “think aloud” study asked participants to *recall* the information they may or may not have reviewed while completing the checkout task.¹⁵¹

Participants in Prof. Chetty’s “think aloud” study were not instructed to review this information and were not told they would be asked to recall that information. Hence, it is unsurprising that some participants reviewed that information while others did not, regardless of the design characteristics of the CandyForever website. For instance, some study participants may not have been interested in Premium and thus found it unnecessary to review the information about the terms and conditions of Premium.¹⁵² Indeed, of the 30 participants in Prof. Chetty’s “think aloud” study, 18 did not enroll in Premium.¹⁵³

75. Further, even among study participants who reviewed the terms and conditions of Premium, some participants may not have been able to recall that information regardless of whether it was presented in a way that they could comprehend. Indeed, it has been shown that participants in studies can fail to recall information they just received. For example, research has

¹⁵¹ Chetty Opening Report, ¶ 321 (“At the end of the first task, the research assistant revisited the online checkout with the participant and asked them to explain what they were thinking for each screen. Participants were also asked to recall the terms of the Premium subscription, i.e., the cost of Premium, when and how often they would be charged for Premium, and the fact that Premium was a subscription service.”). *See, e.g.*, Chetty Backup Materials, “video1069259985.mp4 - Redacted.mp4,” 15:27–16:10 (“[Research Assistant:] Well, so I won’t actually, place the order since you already did. So let’s just go back to the [home page]. And then so during the purchasing process. So yeah, in the past couple pages [...] there were some notes about the CandyForever Premium subscription. Did you see the options for CandyForever Premium[?] [...] How much did it cost [...] When would you be charged that amount [...] And then how often[?]”).

¹⁵² Several participants indicated that they were not interested in the benefits available in the Premium subscription. *See* Chetty Backup Materials, “p15.pdf,” line 99 (“S2: If I were to subscribe from it? Like what? Like what is the only true benefit I would see is probably something that you can get from overseas, something international, you know, because half these things that I got, I’m looking at right now, I can get at a local store.”), “p33.pdf,” lines 73–74 (“[S1:] It doesn’t sound like [the Premium subscription is] something that you would you would want. S2: Well, first of all, I need to, you know, so I don’t need to temp [sic] myself. You know, once you get over, once she hit 40 man. It’s [...] easy putting it on, but it’s a [...] beast trying to take it off. So when I’m shopping especially stuff like candy and stuff, even in the store, it’s like when you [...] go through you, you. That’s the part of the shopping experience that you go through and you go through fast. Because if you sit there and you take your time, you’re going to order a bunch of stuff you really don’t need. You know? So, yeah. (..)[.]”). Therefore, as these respondents were not interested in the benefits of Premium, it is not surprising that, according to Prof. Chetty, they did not read the fine print. *See* Chetty Backup Materials, “participant_coding_analysis.xlsx,” Column K.

¹⁵³ Chetty Backup Materials, “participant_coding_analysis.xlsx,” Column D.

found that study participants can have difficulties with recall,¹⁵⁴ including forgetting their answers to prior survey questions,¹⁵⁵ and that study participants can have trouble recalling prices of items they previously shopped for.¹⁵⁶

76. Moreover, failing to correctly recall the terms does not imply that participants were confused when they enrolled in Premium, or that the Premium terms and conditions were not conveyed to them in a way they could comprehend. Notably, Prof. Chetty's "think aloud" showed that only 2 out of 30 participants reported that they enrolled in Premium "accidentally," and that, as noted above, only 12 out of 30 participants enrolled in Premium at all.¹⁵⁷

¹⁵⁴ Herzog, A. and W. Rodgers (1989), "Age Differences in Memory Performance and Memory Ratings as Measured in a Sample Survey," *Psychology and Aging*, 4, 2, pp. 173–182, p. 176 ("Objective memory-performance measure. The number of correct answers to the six open-ended questions about the physical functions rated during the interview range from 0 to 5, with a mean of 1.31 and a standard deviation of 1.34. For the 20 closed-ended questions, the number of hits ranges from 0 to 10, with a mean of 9.05; the number of false alarms from 0 to 10, with a mean of 4.61; and the number of hits minus the number of false alarms from -3 to +10, with a mean of 4.44 and a standard deviation of 2.70. In the remainder of the article, the number of hits minus the number of false alarms is being used as the closed-ended memory performance measure."). Emphasis in original. See also Dix et al. (2004), p. 359 ("Another factor distinguishing evaluation techniques is the immediacy of the response they provide. Some methods, such as think aloud, record the user's behavior at the time of the interaction itself. Others, such as post-task walkthrough, rely on the user's recollection of events. Such recollection is liable to suffer from bias in recall and reconstruction, with users interpreting events according to their preconceptions. Recall may also be incomplete. However, immediate techniques can also be problematic, since the process of measurement can actually alter the way the user works."). In a post-task walkthrough, the survey participants' actions are replayed back to them. See Dix et al. (2004), p. 347 ("Often data obtained via direct observation lack interpretation. We have the basic actions that were performed, but little knowledge as to why. Even where the participant has been encouraged to think aloud through the task, the information may be at the wrong level. [...] A walkthrough attempts to alleviate these problems, by reflecting the participants' actions back to them after the event. The transcript, whether written or recorded, is replayed to the participant who is invited to comment, or is directly questioned by the analyst.").

¹⁵⁵ Schwarz, H., M. Revilla and W. Weber (2020), "Memory Effects in Repeated Survey Questions Reviving the Empirical Investigation of the Independent Measurements Assumption," *Survey Research Methods*, 14, 3, pp. 325–344, <https://ojs.ub.uni-konstanz.de/srm/article/view/7579>, p. 325 ("We found that, after an average 20-minute interval, 60% of the respondents were able to correctly reproduce their previous answer, of which we estimated 17% to do so due to memory.").

¹⁵⁶ Jensen, B. and K. Grunert (2014), "Price Knowledge During Grocery Shopping: What We Learn and What We Forget," *Journal of Retailing*, 90, 3, pp. 332–346, p. 339 ("We show the percentage of responses that indicated correct price knowledge before, during, and after the store visit in Table 4. Between 7.6 and 43.8 percent of the respondents recalled the correct price during the shopping trip"), Table 4.

¹⁵⁷ Chetty Opening Report, ¶ 351(i), ¶ 352(i).

E. Prof. Chetty’s “Think Aloud” Study Relied on a Fictitious Subscription that Does Not Replicate the Prime Membership, and Therefore Its Results Are Not Relevant

77. Prof. Chetty’s “think aloud” study relied on a website for a fictitious company called CandyForever, which included a checkout process during which participants could enroll in a fictitious subscription called Premium. According to Prof. Chetty, the fictitious Premium subscription was “modeled on Prime [and] offered shipping benefits akin to Prime,”¹⁵⁸ and “the CandyForever checkout [process included] the same upsells to be enrolled in CandyForever Premium that someone shopping for a product on the Amazon website would receive to enroll into Prime.”¹⁵⁹

78. However, as I explain below, Prof. Chetty’s Premium subscription is substantially different from Amazon’s Prime membership in relation to the questions addressed in her report. Given these differences, participants in Prof. Chetty’s “think aloud” study likely responded differently to the Premium subscription offer than Amazon consumers would to the Prime membership offer.

79. First, Amazon offers a broad range of goods and services,¹⁶⁰ and its Prime membership offers a similarly broad range of benefits including: free delivery; access to streaming services such as Prime Video and Amazon Music Prime; discounted Amazon Music Unlimited plans; access to Prime Gaming, Prime Reading, Amazon Photos; and savings at brick-and-mortar store

¹⁵⁸ Chetty Opening Report, ¶ 291.

¹⁵⁹ Chetty Opening Report, ¶ 295.

¹⁶⁰ Amazon.com, Inc., SEC Form 10-K for Period Ended December 31, 2024, Filed February 7, 2025, p. 3 (“We serve consumers through our online and physical stores and focus on selection, price, and convenience. We design our stores to enable hundreds of millions of unique products to be sold by us and by third parties across dozens of product categories. [...] We also manufacture and sell electronic devices, including Kindle, Fire tablet, Fire TV, Echo, Ring, Blink, and eero, and we develop and produce media content. We seek to offer our customers low prices, fast and free delivery, easy-to-use functionality, and timely customer service.”).

Whole Foods Market.¹⁶¹ In contrast, the fictitious CandyForever company sells only candy,¹⁶² and its fictitious Premium subscription offers benefits related to only candy, including: free shipping and free returns of candy purchases;¹⁶³ unlimited candy and access to more types of

¹⁶¹ “Prime Membership Benefits,” *Amazon*, <https://www.amazon.com/b?ie=UTF8&node=23945845011>, (“FREE Two-Day Delivery: Millions of items delivered fast and free. FREE One-Day Delivery: Available on more than 15 million items with no minimum purchase. FREE Same-Day Delivery: Available, in select areas, on over 3 million items for qualifying orders that meet the minimum threshold of eligible items, in as fast as five hours. [...] Prime Video: Prime Video is a one-stop entertainment destination offering customers a vast collection of premium programming in one application available across thousands of devices. [...] Amazon Music for Prime members: Shuffle play all the music and listen to the largest catalog of top podcasts without ads—included with Prime. Amazon Music Unlimited: 100 million songs on-demand and the most ad-free top podcasts. Listen offline and in HD audio—starting at \$10.99/month with Prime. Prime Gaming: At no additional cost, Prime members enjoy free games, a Twitch channel subscription, and more gaming benefits every month. Amazon Photos: Prime members get unlimited full-resolution photo storage and 5GB for video storage with Amazon Photos. [...] Prime Member Deals at Whole Foods Market: Exclusive discounts and offers on qualifying item(s) for Prime members in-store and online. [...] Prime Reading: Read as much as you want from a rotating selection of thousands of eBooks, popular magazines, comics and audiobooks.”); “Amazon Music Unlimited,” *Amazon*, <https://www.amazon.com/music/unlimited>, (“Amazon Music Unlimited [...] Auto-renews at \$11.99/month after (\$10.99/mo. for Prime members) until canceled.”). In her report, Prof. Chetty does not indicate the time period in which the checkout and cancellation flows she is trying to mimic were in place. To construct the CandyForever website, Prof. Chetty relied on images from pages of the Amazon that was in place during prior periods. For the cancellation process, for instance, Prof. Chetty replicated the three-page Cancellation Flow that existed from 2016 until about April 2023. *See Chetty Opening Report*, ¶ 298 (“For cancellation processes, we tested the Iliad process.”); *First Amended Complaint*, ¶ 130 (“Amazon launched the Iliad Flow in 2016, and did not substantially change it in the United States until in or about April 2023.”). Similarly, for the checkout process, Prof. Chetty relied on an image of a UPDP from around May 2022, as well as other undated UPDPs. *See Chetty Opening Report*, ¶ 297 (“For enrollment detours, we tested the MPP checkout process with three different versions of the UPDP Prime detour. All three versions had Attachment D as their base. [...] The first UPDP version we tested was from Attachment D. The second version of UPDP we tested was based on Attachment H, and the third version of UPDP was based on Attachment I.”). Note that Attachment D is dated as May 2022. *See Chetty Opening Report*, Attachment D. If Prof. Chetty’s intention was to mimic the checkout and cancellation processes from the period 2022–2023, it would still be correct that the benefits offered by Prime were substantially broader than those offered by the fictitious Premium subscriptions. *See “Amazon Prime,” Amazon*, [archived] <https://web.archive.org/web/20221103161328/https://www.amazon.com/gp/help/customer/display.html?nodeId=G6LDPN7YJHYKH2J6>, (“As an Amazon Prime member, you receive many shipping, shopping, streaming, reading, and other benefits. [...] FREE Two-Day Shipping on eligible items to addresses in the contiguous US and other shipping benefits. [...] FREE Same-Day Delivery in eligible zip codes. [...] FREE Release-Date Delivery on eligible preorder items delivered on their release date to ZIP codes within the continental US. [...] Prime Video offers unlimited streaming of movies and TV episodes for paid or free trial members in the US and Puerto Rico. [...] Amazon Music Prime, where you have unlimited, ad-free access to hundreds of Prime Playlists, and more than two million songs for members in the US and Puerto Rico. [...] Prime members can get discounted Amazon Music Unlimited monthly plans [...] Prime Gaming, where you get free games, in-game content, and a free channel subscription on Twitch.tv every month. [...] Whole Foods Market provides exclusive savings for Prime members [...] Prime Reading: Borrow books, magazines, and more from the Prime Reading catalog. [...] Amazon Photos: Get secure unlimited photo storage [...]”).

¹⁶² Chetty Opening Report, ¶ 84 (“For this user study, I developed an interactive website that mimicked the Amazon Prime website as closely as possible under the guise of a candy store.”); Chetty Backup Materials, “Study Guide.pdf” (“So, the idea of Candyforever.com is that you can purchase candy from countries around the world at different price points.”). Emphasis removed.

¹⁶³ Chetty Backup Materials, “9.SOSP-(V2only).png.” *See also* Chetty Backup Materials, “11.UPDP-V1.png,” “12.UPDP-V2.png,” “6.example-product-page.png.”

candy;¹⁶⁴ access to special deals, discounts, and exclusive offers in the purchase of candy;¹⁶⁵ and support from a dentist network.¹⁶⁶

80. The benefits of the fictitious Premium subscription are narrower and likely less valuable than those of a Prime membership, especially for participants who are not interested in consuming large amounts of candy. As a result, participants in Prof. Chetty's "think aloud" study may have paid less attention to the Premium offer during the checkout process than Amazon customers would have to a Prime offer. Indeed, academic research has found that motivation and relevance can affect how much attention consumers pay to advertisements, with attention increasing when consumers are more motivated and the information is more relevant to them.¹⁶⁷ Hence, the behavior and potential confusion among Prof. Chetty's study participants when considering enrolling in Premium cannot be assumed to be the same as the behavior and potential confusion among Amazon shoppers when considering enrolling in a Prime membership during the checkout process, and the results of Prof. Chetty's "think aloud" study likely overestimate the confusion (if any) of Amazon shoppers when considering enrolling in a Prime membership during the checkout process.

¹⁶⁴ Chetty Backup Materials, "13.UPDP-V3.png." I understand that the "unlimited candies" benefit allows Premium members to order as many candies as they like, "any time [they] want." See Chetty Backup Materials, "15.order-review-(WithPremium).png." I also understand that Premium members have "[a]ccess to [m]ore [t]ypes of [c]andies" than non-Premium members do as one of their Premium benefits. See Chetty Backup Materials, "13.UPDP-V3.png."

¹⁶⁵ Chetty Backup Materials, "24.end-membership-page1.png," "26.end-membership-page3a.png."

¹⁶⁶ Chetty Backup Materials, "15.order-review-(WithPremium).png." Note that Premium members supposedly could also share their benefits with a member of their household. See Chetty Backup Materials, "22.premium-central-b.png," "23.manage-membership-dropdown.png."

¹⁶⁷ Casado-Aranda, L.-A., J. Sánchez-Fernández and J.-Á. Ibáñez-Zapata (2023), "Evaluating Communication Effectiveness Through Eye Tracking: Benefits, State of the Art, and Unresolved Questions," *International Journal of Business Communication*, 60, 1, pp. 24–61, <https://journals.sagepub.com/doi/pdf/10.1177/2329488419893746>, pp. 39–40 ("Personal Relevance and Motivation. Eye-tracking research has highlighted the fact that visual attention to the same ads can be highly heterogeneous across consumers, suggesting that these differences could be due to distinct individual characteristics. [...] Interestingly, these differences in attention were found to coincide with differences in personal relevance and attitudes between participants. For example, the segment that mainly paid attention to the pleasurable brand information (i.e., the pictures of the female model and product) corresponded to those participants perceiving shampoo as a relevant and pleasurable product. [...] Along this line, Marquart, Matthes, and Rapp (2016) found that political predispositions and motivations (left-wing or right-wing) predict exposure (i.e., fixation time) to political ads by the closer political party. Altogether, this set of evidence illustrates that the visual attributes of advertising designs and their originality do not guarantee that they will capture adequate attention if other aspects are neglected such as the relevance or motivation of the messaging to the target market."). Emphasis in the original.

81. Second, given the fictitious nature of the Premium subscription, participants had a lower level of familiarity with the Premium subscription than many Amazon shoppers would likely have with the Prime membership. Indeed, while participants were certainly not familiar with Premium (as Premium is a fictitious subscription program), they may have been familiar with Prime due to various factors, including potential exposure to Amazon Prime advertising on the Amazon.com website, social media, and physical ads,¹⁶⁸ the fact that the Prime membership includes multiple popular benefits,¹⁶⁹ and the fact that some participants may have been presented with Prime offers before.

82. The effect of the lack of familiarity with the Premium subscription is compounded by the fact that the Premium subscription advertises “unlimited candies” as part of its benefits,¹⁷⁰ a type of promotional language that study participants are unlikely to have encountered before. In particular, it is unclear why a company would offer unlimited amounts of a product or limit the amount of product its customers can buy unless they join a subscription program. In fact, the

¹⁶⁸ “‘An Evergreen Construct’: Behind Amazon’s Global Prime Marketing Campaign,” *ModernRetail*, September 6, 2023, <https://www.modernretail.co/marketing/an-evergreen-construct-behind-amazons-global-prime-marketing-campaign/> (“Last March, Amazon released an ad campaign focused specifically on getting people to sign up for Prime.”); “Amazon Prime Day: A Show of Marketing Muscle,” *Forbes*, July 16, 2018, <https://www.forbes.com/sites/derekcrucker/2018/07/16/amazon-prime-day-a-show-of-marketing-muscle/> (“Prime Day has the opportunity to showcase the value of being a member of Amazon Prime.”); “7 Shopping Benefits that Come with Your Prime Membership,” *Amazon*, November 13, 2024, <https://www.aboutamazon.com/news/retail/prime-membership-shopping-benefits>; “Amazon Prime’s Marketing Strategy & Advertising Campaigns,” *Digital Agency Network*, June 21, 2023, <https://digitalagencynetwork.com/amazon-prime-marketing-strategy-advertising-campaigns/> (“Social media platforms are among the key pillars of Amazon Prime Video’s digital marketing strategy because of their adept use. Through carefully crafted social media campaigns, the streaming giant leverages platforms such as Instagram and YouTube to connect with its audience on a personal level.”); “Prime Day Marketing Strategies that Make Amazon Shine Year After Year,” *Brand Vision Insights*, January 23, 2025, <https://www.brandvm.com/post/prime-day-marketing> (“Amazon takes its Prime Day advertising campaign to the streets, quite literally, by utilizing ads on buildings, buses, and subways. [...] Amazon’s multi-channel marketing approach is a key driver behind the widespread reach and impact of Prime Day. Leveraging its website, mobile app, social media channels, and email campaigns, Amazon creates a seamless and immersive experience for customers. By strategically integrating Prime Day messaging across these platforms, Amazon maximizes brand exposure and ensures that customers are consistently reminded of the upcoming event.”).

¹⁶⁹ For instance, public press has covered the multiple benefits that Prime offers and such information is available to both Prime members and non-members. See, e.g., “The 25 Best Amazon Prime Benefits,” *Business Insider*, October 7, 2024, <https://www.businessinsider.com/guides/tech/amazon-prime-benefits>; “Amazon Prime: 21 Benefits Every Member Gets,” *CNET*, October 29, 2019, <https://www.cnet.com/deals/amazon-prime-benefits-every-member-gets/>; “Amazon Prime Membership 101: Everything to Know About Prime Member Perks, Plus How to Sign Up for Free,” *People*, November 20, 2024, <https://people.com/amazon-prime-membership-8642376>.

¹⁷⁰ See Chetty Backup Materials, “15.order-review-(WithPremium).png” (“Unlimited candies, anytime you want[.]”).

“unlimited candies” promotional language could have confused study participants, as some participants stated that they believed they were subscribing for recurring candy shipments.¹⁷¹ As a consequence, when considering whether to enroll in Premium, participants in Prof. Chetty’s “think aloud” study could not rely on prior knowledge about Premium as they would when considering enrolling in Prime during the checkout process. Hence, the behavior and potential confusion among Prof. Chetty’s study participants regarding Premium is not informative of the behavior and potential confusion among Amazon shoppers regarding Prime when going through the checkout process.

F. Prof. Chetty’s “Think Aloud” Study Measured Key Outcomes Arbitrarily, and Therefore Its Results Are Not Reliable

83. Prof. Chetty measured certain key outcomes of her “think aloud” study by directly asking questions to participants after they finished each of the two tasks. In particular, Prof. Chetty relied on questions posed to participants after the checkout task to determine whether participants knew the cost and charge timeline of Premium, and understood the nature of Premium as a subscription program.¹⁷² Similarly, Prof. Chetty relied on questions posed to

¹⁷¹ Chetty Opening Report, ¶ 353 (v) (“All 10 participants who were uninformed enrollments mentioned a desire for free fast shipping without necessarily realizing this was tied to Premium. [...] In a similar instance, P7 also enrolled in UPDP for free fast shipping but did not know the cost of Premium and seemed to think that Premium meant that they were going to get a recurring candy shipment for the product they were ordering, saying *‘I’m thinking about, this free over here. Like, everything. That’s what I’m thinking about. (...) I can’t wait to get it. That’s what I’m thinking about.’* [...] All these examples suggest the visual prominence of the wording free, fast shipping and Interface Interference do confuse users.”). Emphasis in original.

¹⁷² Prof. Chetty coded participants as “Knew Cost of Premium,” “Knew Charge Timeline of Premium,” “Understood Nature of Premium,” “Informed Enrollment,” and “Accidental Enrollment” based on their responses to questions about the terms of Premium and whether their enrollment had been intentional. *See, e.g.*, Chetty Backup Materials, “participant_coding_analysis.xlsx,” Columns L, Q, O, T, V. *See also* Chetty Opening Report, ¶ 321 (“Participants were also asked to recall the terms of the Premium subscription, i.e., the cost of Premium, when and how often they would be charged for Premium, and the fact that Premium was a subscription service. They were also asked if their enrollment choice for Premium matched what they had intended to happen during the task.”); Chetty Opening Report, ¶ 338 (“We also amended the protocol to ask about Premium costs, frequency of charges, and what the subscription entailed.”); Chetty Backup Materials, “Study Guide.pdf,” pp. 3–4 (“During the purchasing process, there were some notes about CF Premium—Did you see the options for CF Premium? How much did Premium cost [...] Wait hm, it looks like you did enroll in candy forever premium, is that something you meant to do?”).

participants after the cancellation task to determine whether participants found that the cancellation process was “onerous.”¹⁷³

84. Despite the importance of these key outcomes to Prof. Chetty’s conclusions, the questions that generate these key outcomes were not posed systematically to all participants. Instead, Prof. Chetty’s “research assistant had to determine when to ask each question.”¹⁷⁴ As a result, not all participants were asked the same questions, even though Prof. Chetty’s “study guide” does not indicate that certain questions should be asked only to certain participants.¹⁷⁵ Lacking a systematic method to ask questions to participants may have affected Prof. Chetty’s conclusions. For example, Prof. Chetty claims that, “[e]ight participants were not asked explicitly about when they would be charged [...] because they did not indicate they knew enough about the Premium subscription to be able to answer the question.”¹⁷⁶ Because Prof. Chetty did not pose questions systematically, it is not possible to determine if these participants were capable of answering the question about when they would be charged for Premium, as Prof. Chetty acknowledges.¹⁷⁷

¹⁷³ Prof. Chetty coded participants as “Said Cancellation was Onerous” based on their responses to questions soliciting feedback about the cancellation process. *See, e.g.*, Chetty Backup Materials, “participant_coding_analysis.xlsx,” Column AD. *See also* Chetty Backup Materials, “Study Guide.pdf,” pp. 4–5 (“Now having gone through that process, is there anything you want to share with CandyForever about the Premium cancellation process? [If want more prompt] with respect to finding it or completing it?”). Emphasis removed.

¹⁷⁴ Chetty Opening Report, ¶ 354 (iii).

¹⁷⁵ Chetty Backup Materials, “Study Guide.pdf,” pp. 3–5 (“[When they are done]. (order placed screen) Okay so I am going slide over to that side and take control of the mouse for a moment. [Take back the mouse] [...] Is there anything that you would want to share with CandyForever about the site navigation with respect to purchasing items? [If want more prompt] Is there anything you would change about the checkout flow? [Go back through the flow, each screen.] [I click through for them]. Let’s retrace it click by click and you can share whatever you think the website owners should know. What were the most important things on this screen for you? [Order Review Page: Don’t place order] So then you pressed Place Order, which I won’t actually do so as to not double order your candy Let’s just go back to the home page. During the purchasing process, there were some notes about CF Premium—Did you see the options for CF Premium? How much did Premium cost? When would you be charged that amount? How often[?] [...] [Once able to cancel] [Take control] [Click through screens] Okay you were able to cancel. Let’s go back to the start here and just do the same thing we did before. I’ll click through and we can discuss the screens. With respect to trying to cancel Premium, what were the important things you saw on this screen? [Each screen] Well this works out, it’s more data to share. And I’ll just ask the same question as before. Now having gone through that process, is there anything you want to share with CandyForever about the Premium cancellation process? [If want more prompt] with respect to finding it or completing it...?”). Emphasis removed.

¹⁷⁶ Chetty Opening Report, ¶ 354 (iii).

¹⁷⁷ Chetty Opening Report, ¶ 354 (iii) (“Eight participants were not asked explicitly about when they would be charged and so it is unknown if they knew when charges would be incurred and how frequently.”).

G. Prof. Chetty’s “Think Aloud” Study Relied on an Artificial Setting that Likely Confused Participants and Introduced Biases, and Therefore Its Results Are Not Reliable

85. Prof. Chetty’s “think aloud” study was conducted in the presence of a research assistant and relied on representations made to participants which were likely confusing and hard to believe. As a consequence, participants likely did not use the fictitious CandyForever website as consumers would use the real Amazon website.

86. First, Prof. Chetty’s “think aloud” study relied on the presence and intervention of a research assistant who “interviewed participants in person [to] observe their actions and behaviors in real-time and control the study environment”¹⁷⁸ and in which audio and video was recorded.¹⁷⁹ A setting like this is substantially different from the real-world experience of Amazon shoppers and likely affected participants’ behavior. For example, the repeated interactions between the participants and the research assistant during the study may have caused study participants to behave and respond in order to satisfy the perceived goal of the researchers.¹⁸⁰ This phenomenon is called a “demand effect” and occurs when study participants tell the researcher what they think the researcher wants to receive as a response.¹⁸¹ These demand effects can bias the results of the study.¹⁸²

¹⁷⁸ Chetty Opening Report, ¶ 302, Figure 26.

¹⁷⁹ Chetty Opening Report, ¶ 315 (“We audio recorded all study sessions and videorecorded the participants’ screen using Zoom.”).

¹⁸⁰ Chetty Opening Report, ¶¶ 316-318 (“[W]hen participants entered the room, the research assistant reassured them [...] the research assistant asked the users to confirm [...] The research assistant would then point to the part of the screen [...] and pointed out that the user [...] The research assistant first introduced participants to the study format by telling them [...] The research assistant explained [...] The research assistant then muted the microphone to confirm these details with the participants [...] The research assistant reminded participants [...] Participants were also told [by the research assistant] that [...]”).

¹⁸¹ De Quidt, J., L. Vesterlund and A. J. Wilson (2019), “Experimenter Demand Effects,” in *Handbook of Research Methods and Applications in Experimental Economics*, eds. Arthur Schram and Aljaž Ule, Cheltenham, UK: Edward Elgar Publishing Limited, pp. 384–400 (“De Quidt et al. (2019)”), p. 384, (“Experimenter demand effects refer to changes in behavior that result from study participants wanting to help the experimenter confirm his or her underlying hypothesis.”).

¹⁸² De Quidt et al. (2019), p. 384, (“With participants deviating from the choice they would select absent the ‘experimenter’ – henceforth, the ‘true’ preferred choice – the study will produce biased results. [...] [E]xternal validity is threatened because a central feature of the study (the presence of the experiment) influences behavior, but is generally not a factor in the environments we are trying to model.”).

87. Second, in addition to the “demand effect,” the presence of the research assistant, observing and assessing participant behavior while seated right next to the participant, may have caused participants to modify their behavior, a phenomenon called the “Hawthorne effect,”¹⁸³ and made them more prone to mistakes in the study than in a real-world setting. It is well known that, in studies with human subjects, the presence of an observer can change the participants’ behavior and deteriorate participants’ performance.¹⁸⁴ Specifically, it can increase the likelihood of failing recall tasks and attention tasks.¹⁸⁵ These findings are consistent with Prof. Chetty’s observation that one of the “potential disadvantages” of “think-aloud studies[] [is] that users can change their behavior because they are being observed.”¹⁸⁶ Therefore, there are reasons to expect that the behavior of participants in Prof. Chetty’s “think aloud” study would differ from the behavior of real Amazon shoppers. Hence, the results of Prof. Chetty’s study cannot be used to reach reliable conclusions about Amazon shopper behavior.

¹⁸³ “Hawthorne Effect,” *ScienceDirect*, <https://www.sciencedirect.com/topics/computer-science/hawthorne-effect> (“The Hawthorne Effect refers to the phenomenon where participants alter their behavior when they know they are being observed, often leading to improved performance or adherence to protocols.”).

¹⁸⁴ Eastvold, A., H. Belanger and R. Vanderploeg (2012), “Does a Third Party Observer Affect Neuropsychological Test Performance? It Depends,” *The Clinical Neuropsychologist*, 26, 3, pp. 520–541 (“Eastvold et al, (2012)”); p. 520 (“This study is a meta-analysis of available literature examining the effect of an observer on cognitive task performance. Of the 210 identified relevant articles, 62 met inclusion criteria yielding a final sample with 4405 individuals (2496 observed cases, 1909 not observed). The overall effect size was significant ($d = -0.24$), i.e., the presence of an observer was associated with poorer performance.”). *See also* Dix et al. (2004), p. 359 (“Related to the immediacy of the response is the intrusiveness of the technique itself. Certain techniques, particularly those that produce immediate measurements, are obvious to the user during the interaction and therefore run the risk of influencing the way the user behaves. Sensitive activity on the part of the evaluator can help to reduce this but cannot remove it altogether. Most immediate evaluation techniques are intrusive, with the exception of automatic system logging. Unfortunately, this is limited in the information that it can provide and is difficult to interpret.”).

¹⁸⁵ Eastvold et al. (2012), pp. 528–529 (“Specifically, the presence of an observer had an adverse effect on attention/processing speed, learning/memory and delayed recall tasks, with the largest negative impact on delayed recall performance. The presence of an observer did not have a significant effect on intellectual/academic, executive or motor performance. [...] Interestingly, being video or audio-taped also had a negative impact on performance.”); Green, R. (1973), “Effects of Being Observed on Short-and Long-Term Recall,” *Journal of Experimental Psychology*, 100, 2, pp. 395–398, p. 397 (“Those [subjects] who were led to believe that they were being observed reported themselves to be more nervous than those who had not been told that they were being observed [...] Two minutes after exposure to the list [subjects] who had not been observed recalled significantly more digits than those who had [...] Following recall intervals of 15 and 30 min. differences in recall between observed and nonobserved [subjects] were not significant.”).

¹⁸⁶ Chetty Opening Report, ¶ 77. *See also* Dix et al. (2004), p. 343 (“Think aloud has the advantage of simplicity [...] However, the information provided is often subjective and may be selective, depending on the tasks provided. The process of observation can alter the way that people perform tasks and so provide a biased view. The very act of describing what you are doing often changes the way you do it[.]”).

88. Third, Prof. Chetty’s “think aloud” study relied on representations about the CandyForever website which could have been hard to believe or confusing for the study participants. For example, participants were told that CandyForever was a real business and that the CandyForever website was a working website,¹⁸⁷ but as Prof. Chetty acknowledges, at least one of the participants described the interaction with the CandyForever website as a “simulation.”¹⁸⁸ Also, participants were given a debit card preloaded with \$20 and told that they could keep “whatever [money they did not] spend,”¹⁸⁹ but according to Prof. Chetty, at least one of the participants who enrolled in Premium indicated that she did so because “it was not her ‘real money.’”¹⁹⁰ It is likely that participants who were confused or did not believe the representations in the “think aloud” study did not use the fictitious CandyForever website as they would use the real Amazon website.

89. Fourth, the “think aloud” study relied on a study design that provided participants with confusing and contradictory instructions. For example, participants were told that “they would be billed if they did not cancel [Premium] within the study session.”¹⁹¹ However, participants did not have to provide credit card information to participate in the study.¹⁹² In fact, according to Prof. Chetty, one of the participants who enrolled in Premium did so “since they were not using their own credit card” and assuming that enrolling in Premium “[was] going to have no negative consequences.”¹⁹³ Similarly, before the cancellation task, participants who had not enrolled in Premium during the checkout task were told that they had actually enrolled in

¹⁸⁷ Chetty Opening Report, ¶ 303 (“To ensure that users acted as they would if they were using a real website (also known as ‘study realism’), we used a *deception or incomplete disclosure* technique[.]”) emphasis in original, ¶ 304 (“In our case, to study Prime enrollment and cancellation in a realistic setting, we decided to tell participants that 1) CandyForever was a real business, 2) it hired us to evaluate their site [...]”), ¶ 316 (“[W]hen participants entered the room, the research assistant reassured them that the site was real and working by first confirming their account details.”).

¹⁸⁸ Chetty Opening Report, ¶ 353 (ii).

¹⁸⁹ Chetty Backup Materials, “Study Guide.pdf,” p. 2 (“We will also give you a physical debit card that has \$20 preloaded on it. [...] Whatever you don’t spend, you can keep.”).

¹⁹⁰ Chetty Opening Report, ¶ 353 (iii). Emphasis removed.

¹⁹¹ Chetty Opening Report, ¶ 304. *See also* Chetty Opening Report, ¶ 323 (“The research assistant also mentioned that they would not be able to access the CandyForever website from home to cancel the subscription at a later stage.”).

¹⁹² Chetty Opening Report, ¶ 309 (“We provided a gift card to participants to use during the study, instead of their own credit cards, for study realism and user privacy. In particular, each participant used the gift card to enter billing information to complete their purchasing task, so no personal credit card information was disclosed.”)

¹⁹³ Chetty Opening Report, ¶ 353 (ii). Emphasis removed.

Premium regardless. Participants who noted that they had not enrolled in Premium were told that they had been enrolled because “the site may be buggy” and that “they would not be able to access the CandyForever website from home to cancel the subscription at a later stage.”¹⁹⁴ Participants may have been confused by the notion that, because of a technical defect, they would be required to pay for a subscription that they did not enroll in. Study participants who were confused or upset about these instructions may not have used the fictitious CandyForever website as they would use the real Amazon website. Further, the study participants who were told that there was a technical problem on the CandyForever website—one that enrolled them into a subscription without their knowledge—may have been influenced by this information when asked about their experience in the CandyForever website after completing the cancellation task.¹⁹⁵ As such, at least for some participants in the study, their proneness to provide negative comments, or their assessments of the confusing or the “onerous” nature of the cancellation process, may be due to the “deception” in Prof. Chetty’s study.¹⁹⁶ Prof. Chetty has no way of distinguishing the impact of the deception she used in her study from the impact (if any) of the alleged “dark patterns.”

¹⁹⁴ Chetty Opening Report, ¶ 323.

¹⁹⁵ Chetty Backup Materials, “Study Guide.pdf,” pp. 4–5 (“[Once able to cancel] [Take control] [Click through screens] Okay you were able to cancel. Let’s go back to the start here and just do the same thing we did before. I’ll click through and we can discuss the screens. With respect to trying to cancel Premium, what were the important things you saw on this screen? [Each screen] Well this works out, it’s more data to share. And I’ll just ask the same question as before. Now having gone through that process, is there anything you want to share with CandyForever about the Premium cancellation process? [If want more prompt] with respect to finding it or completing it...?”). Emphasis removed. *See also* Chetty Opening Report, ¶ 356 (i) (“19/30 participants mentioned that the cancellation screen process was onerous. In particular, these participants expressed that cancellation had too many steps, or had many options and signposts to try to keep them from cancelling their subscription which was frustrating.”). Emphasis removed.

¹⁹⁶ Chetty Opening Report, ¶ 303 (“To ensure that users acted as they would if they were using a real website (also known as ‘study realism’) we used a deception or incomplete disclosure technique[.]”) emphasis removed, ¶ 322 (“[A]fter the first task was completed, our system automatically enrolled the participant in Premium, even if they did not choose to enroll, so that we could initiate our deception protocol for the cancellation task.”).

H. The Results of Prof. Chetty’s “Think Aloud” Study Do Not Support Her Conclusions

1. The Results of Prof. Chetty’s “Think Aloud” Study Do Not Support Her Conclusions About Prime Enrollment During Checkout

90. Based on the results of the “think aloud” study, Prof. Chetty concluded that “the design of the Prime detours in the enrollment flow can confuse consumers and lead them to accidentally enroll in Prime or to enroll in Prime without knowing its material terms.”¹⁹⁷

91. However, the conclusion that the Prime enrollment flow “can confuse consumers and lead them to accidentally enroll in Prime”¹⁹⁸ is not supported by the results of Prof. Chetty’s “think aloud” study. According to Prof. Chetty, only 12 out of 30 participants enrolled in Premium during the checkout task.¹⁹⁹ However, participants were not instructed to avoid enrolling in Premium during the checkout task, so the fact that some participants enrolled in Premium during checkout does not imply that participants were confused.²⁰⁰ In fact, as Prof. Chetty acknowledges, her “think aloud” study provided incentives for participants to enroll in Premium by “creat[ing] a situation where participants were motivated to shop and to think free shipping could be useful since they could save and reclaim the money remaining on the gift card by lowering their shipping costs[.]”²⁰¹ Only 2 out of 30 participants enrolled in Premium in what Prof. Chetty describes as in a “clearly accidental” way,²⁰² but Prof. Chetty cannot claim that these “clearly accidental” enrollments are caused by the alleged “dark patterns” or other

¹⁹⁷ Chetty Opening Report, ¶ 360.

¹⁹⁸ Chetty Opening Report, ¶ 360.

¹⁹⁹ Chetty Backup Materials, “participant_coding_analysis.xlsx,” Column C; Chetty Opening Report, ¶ 351 (i) (“Over one-third of participants (12/30) enrolled in Premium.”). Emphasis removed.

²⁰⁰ Prof. Chetty’s “study guide” contains no instructions about telling participants to enroll or not enroll in Premium. Chetty Backup Materials, “Study Guide.pdf,” pp. 1–3.

²⁰¹ Chetty Opening Report, ¶ 305.

²⁰² Chetty Opening Report, ¶ 345 (“If a participant clearly indicated that they did not mean to enroll in Premium, we applied a code ‘Accidental Enrollment.’ This is a lower bound for accidental enrollments since we were conservative in labelling these cases.”), ¶ 352 (i) (“Two enrollments in Premium were clearly accidental based on what the participants did on the screen and said verbally during the observations. P4 stated they did not want a Premium subscription and was confused about the shipping options and clicked the option for free shipping with Premium and was enrolled anyway. They then changed the shipping option after enrolling and did not realize they were still enrolled in Premium. P30 did not choose Premium on UPDP and said he did not want it but then he selected the one-day shipping option at checkout which enrolled him and he said that he did not notice that at the time.”). Emphasis removed.

offending design elements because there are additional possible sources of consumer confusion or inattention (in other words, even in the absence of any offending design elements, it is unlikely that there will be no confusion).²⁰³

92. Similarly, as I explain below, Prof. Chetty's conclusion that the Prime enrollment flow can lead consumers "to enroll in Prime without knowing its material terms"²⁰⁴ is also not supported by the results of Prof. Chetty's "think aloud" study.

- a. Prof. Chetty indicates that only 3 out of 30 participants "read the fine print terms and conditions of Premium on the bottom of the UPDP page when going through the [checkout] task[.]"²⁰⁵ However, it does not follow from this that Amazon's checkout process led consumers to "enroll in Prime without knowing its material terms" or that the "terms are not prominent and can easily be missed by consumers,"²⁰⁶ because there could be some participants who would not read the fine print, but would nonetheless enroll due to their individual preferences. For instance, some participants could have *preferred* to proceed quickly without reading the fine print.

²⁰³ Academic literature has found that consumers exhibit inattention in a wide variety of settings, including surveys, household finances, and situations where stakes are low, and that consumers could be confused for reasons unrelated to the alleged "dark patterns." See Diamond and Swann (2022), p. 275, ("Undergirding each factor described above is a general acknowledgment that survey respondents are not computers—they are human beings and, as such, have limited attention spans, imperfect memories, and personal motivations. With respect to the limits of attention and memory, respondents will not always 'optimize' their mental effort and attention, but rather will 'satisfice'; they will use mental shortcuts, or heuristics, to answer a question."); Stango, V. and J. Zinman (2014), "Limited and Varying Consumer Attention: Evidence from Shocks to the Salience of Bank Overdraft Fees," *Review of Financial Studies*, 27, 4, pp. 990–1030, p. 992 ("In all, our results suggest that consumers have a limited, time-varying, associative, and malleable stock of attention paid to day-to-day household finance."); Maćkowiak, B., F. Matějka and M. Wiederholt (2023), "Rational Inattention: A Review," *Journal of Economic Literature*, 61, 1, pp. 226–273, p. 227 ("[W]e pay little attention to facts when our personal stakes are low"), p. 262 ("They find that the subjects' attention changes with the stakes, in line with the qualitative predictions of RI [(“Rational Inattention”)]."); Walsh, G., T. Hennig-Thurau and V.-W. Mitchell (2007), "Consumer Confusion Proneness: Scale Development, Validation, and Application," *Journal of Marketing Management*, 23, 7–8, pp. 697–721, pp. 697–698 ("...[I]t is no wonder that some consumers find information processing for some tasks confusing. [...] confusion pervades almost every decision that consumers make and incidences of consumer confusion have been reported in many different countries and in a host of product markets[.]"); Conlisk, J. (1996), "Why Bounded Rationality?" *Journal of Economic Literature* 34, 2, pp. 669–700, p. 670 ("There are many studies in which single individuals are faced with decisions which have objectively correct answers and which test the kinds of reasoning frequently ascribed to agents in economic theory. Do subjects do well in such tests? Often not.").

²⁰⁴ Chetty Opening Report, ¶ 360.

²⁰⁵ Chetty Opening Report, ¶ 353 (i).

²⁰⁶ Chetty Opening Report, ¶ 354 (i); Chetty Opening Report, ¶ 360.

- b. As Prof. Chetty acknowledges, of the 27 participants who “did not read the Premium [fine print] terms [and conditions] shown on the bottom of the UPDP page,” 17 did not enroll in Premium.²⁰⁷ Hence, the fact that these participants did not read the fine print is unsurprising.
- c. According to Prof. Chetty, 9 out of 30 participants “correctly recalled all of the information about the cost, frequency of charges, and nature of Premium as a subscription.”²⁰⁸ However, participants in Prof. Chetty’s “think aloud” study were not instructed to remember the information they saw during the checkout task.²⁰⁹ Hence, it cannot be concluded from this observation that they would have been unable to recall if that had been their intention.
- d. 11 out of the 21 participants that, according to Prof. Chetty, did not “correctly recall[]” all of the information about the cost, frequency of charges, and nature of Premium as a subscription did not enroll in Premium.²¹⁰ Hence, these study participants did not have incentives or need to read (let alone remember) this information.
- e. Prof. Chetty failed to explain how it is possible that nine participants recalled the terms and conditions of Premium if only three participants read the terms and conditions at the bottom of the UPDP.²¹¹

93. In addition, as discussed in Section VI.B, the design of Prof. Chetty’s “think aloud” study does not allow her to draw causal conclusions because it cannot isolate the effect, if any, of the alleged “dark patterns.”²¹²

²⁰⁷ Chetty Opening Report, ¶ 353 (i); Chetty Backup Materials, “participant_coding_analysis.xlsx,” Columns D, K.

²⁰⁸ Chetty Opening Report, ¶ 354 (i).

²⁰⁹ Chetty Backup Materials, “Study Guide.pdf,” pp. 2–3.

²¹⁰ Chetty Opening Report, ¶ 354 (i); Chetty Backup Materials, “participant_coding_analysis.xlsx,” Columns D, L, O, Q.

²¹¹ Chetty Opening Report, ¶ 353 (i) (“Only 3/30 read the fine print terms and conditions of Premium on the bottom of the UPDP page when going through the first task of purchasing a product.”), ¶ 354 (i) (“After completing the first task and going through a reflection of their actions, only 9/30 participants correctly recalled all of the information about the cost, frequency of charges, and nature of Premium as a subscription.”). Emphasis removed.

²¹² Chetty Opening Report, ¶ 360 (“The user study results confirmed the results of the cognitive walkthrough I conducted of the Prime detours in the checkout process and the cancellation processes. Study participants

2. The Results of Prof. Chetty's "Think Aloud" Study Do Not Support Her Conclusions About the Prime Online Cancellation Process

94. Based on the results of her "think aloud" study, Prof. Chetty concluded that "[s]tudy participants [...] did not find the cancellation process easy" and "did not finish the cancellation process," even though they were instructed and incentivized to do so.²¹³ However, as I explain below, this conclusion is not supported by the results of her "think aloud" study.

95. First, 28 out of 30 participants in Prof. Chetty's "think aloud" study cancelled their Premium subscription.²¹⁴ This cancellation rate of 93% is consistent with the 96% cancellation rate I found in the Cancellation Survey presented in my opening report.²¹⁵

96. Second, the 93% cancellation rate in Prof. Chetty's "think aloud" study is likely lower than the rate at which Prime members who attempt to cancel Prime would cancel Prime because, in the real world, Prime members who attempt to cancel Prime would be more motivated than participants in Prof. Chetty's "think aloud" study. For example, as explained in Section VI.G, participants may not have believed the representations made to them during the "think aloud" study, including representations meant to provide incentives for cancellation.²¹⁶ Similarly, as explained in Section VI.E, given the fictitious nature of the Premium subscription, it is likely that Prime members would be more familiar with the Prime membership than participants in the "think aloud" study were with the Premium subscription.

accidentally enrolled in Prime while navigating the checkout process due to the design issues I had identified in my walkthrough [...] it is my opinion that the design of the Prime detours in the enrollment flow can confuse consumers and lead them to accidentally enroll in Prime or to enroll in Prime without knowing its material terms.").

²¹³ Chetty Opening Report, ¶ 360 ("The user study results confirmed the results of the cognitive walkthrough I conducted of the Prime detours in the checkout process and the cancellation processes. [...] Study participants did not finish the cancellation process[.]"), ¶ 307 ("We did not place participants under any time-pressure; we provided them a large screen to look carefully at the flows; and we incentivized them to both purchase an item and cancel a subscription. [...] Participants were also more likely to complete the tasks they were given, such as cancelling their subscription, since we expressly asked them to do so[.]"), ¶ 304 ("[W]e decided to tell participants that [...] they would be billed if they did not cancel within the study session.").

²¹⁴ Chetty Opening Report, ¶ 355 (i)–(ii) ("13/30 participants were able to complete the cancellation process without needing help to find the cancellation option, without checking orders first, and without stopping too soon in the cancellation process. [...] "15/17 participants did eventually complete the cancellation process, many with assistance from the research assistant.") emphasis removed; Chetty Backup Materials, "participant_coding_analysis.xlsx," Column X.

²¹⁵ Wilcox Opening Report, ¶ 15.

²¹⁶ See ¶ 88.

97. Third, Prof. Chetty claims that at most 15 out of 28 participants who cancelled Premium in Prof. Chetty's "think aloud" study needed some help from the research assistant.²¹⁷ Prof. Chetty relies on the fact that these participants needed help to claim that "participants had trouble completing the cancellation process."²¹⁸ However, as Prof. Chetty herself acknowledges, the assistance provided was minimal.²¹⁹ Indeed, according to Prof. Chetty's "study guide," if the participant needed "some guidance" during the cancellation task, the research assistant was only instructed to provide general prompts such as "[w]hat are the types of things you are looking for?" or "[w]hat do you think you would do next?,"²²⁰ and not show the participants how to cancel Premium. Prof. Chetty does not explain why such assistance, which consisted of minimal prompts, supports her conclusions that "participants had trouble."²²¹

98. Further, the fact that some participants received help from the research assistant could have been the result of the research assistant's decision to intervene and not the result of participants having trouble completing the cancellation process or needing guidance to do so.²²² Indeed, Prof. Chetty's "study guide" instructed the research assistant to provide these prompts if the participant needed guidance or was not able to cancel the Premium subscription,²²³ but does not provide any indication of how to decide whether the participant was in any of these situations,

²¹⁷ Chetty Opening Report, ¶ 355 (ii) ("The remaining 17/30 participants had trouble completing the cancellation process. 15/17 participants did eventually complete the cancellation process, many with assistance from the research assistant.") emphasis removed; Chetty Backup Materials, "participant_coding_analysis.xlsx," Columns X, AA, AC.

²¹⁸ Chetty Opening Report, ¶ 355 (ii) ("The remaining 17/30 participants had trouble completing the cancellation process. 15/17 participants did eventually complete the cancellation process, many with assistance from the research assistant."). Emphasis removed.

²¹⁹ Chetty Opening Report, ¶ 324 ("If the participant had any problems during the [cancellation] process, the research assistant encouraged them to keep going with minimal assistance.").

²²⁰ Chetty Backup Materials, "Study Guide.pdf," p. 4.

²²¹ Chetty Opening Report, ¶ 355 (ii) ("The remaining 17/30 participants had trouble completing the cancellation process."). Emphasis removed.

²²² Chetty Opening Report, ¶ 355 (ii) ("The remaining 17/30 participants had trouble completing the cancellation process. 15/17 participants did eventually complete the cancellation process, many with assistance from the research assistant."). Emphasis removed; Chetty Backup Materials, "Study Guide.pdf," p. 4 ("[If needs some guidance] E.g., What are the types of things you are looking for? [If still not] [Guide clicks] Shoot. That's okay, let's try to get through it. E.g., What do you think you would do next?").

²²³ Chetty Backup Materials, "Study Guide.pdf," p. 4 ("[If needs some guidance] E.g., What are the types of things you are looking for? [If still not] [Guide clicks] Shoot. That's okay, let's try to get through it. E.g., What do you think you would do next?").

leaving it to the research assistants' discretion.²²⁴ It is possible that participants would have cancelled Premium without assistance.

99. Based on her “think aloud” study, Prof. Chetty also concluded that participants found the Premium cancellation process “onerous and repetitive,”²²⁵ suggesting that the Prime cancellation process is also “onerous and repetitive.” However, as I explain below, this conclusion is also not supported by the results of her “think aloud” study.

100. First, according to Prof. Chetty, 19 out of 30 participants expressed that the Premium cancellation process contained “too many steps [and] had many options and signposts to try to keep them from cancelling their subscription[,] which was frustrating.”²²⁶ However, despite these subjective assessments, objective measures of participants' ability to cancel the Premium subscription show that 93% of them were able to do so.²²⁷

101. Second, a study based on the fictitious Premium subscription as the “think aloud” study conducted by Prof. Chetty cannot be informative about how Prime members would consider the decision of cancelling their Prime membership. As explained in Section VI.E, unlike the Premium subscription, the Prime membership offers a broad set of benefits. As a consequence, while study participants may have considered the number of “steps” and “signposts” in the Premium subscription's cancellation process too high, it is possible that the same individuals would find the same number of “steps” and “signposts” in the Prime cancellation process helpful as that would allow them to better consider the broad range of benefits that the Prime membership offers before giving them up. Therefore, while study participants may have found the Premium cancellation process “onerous and repetitive” or expressed that it had “too many steps,” it is possible they would have found the steps of the Prime cancellation process helpful.

102. In addition, whether a cancellation flow contained “too many steps” is a subjective, person-by-person assessment. Some Prime members may not want or need the information presented in those additional steps, but those additional steps could have been helpful to other Prime members.

²²⁴ Chetty Backup Materials, “Study Guide.pdf,” pp. 3–5.

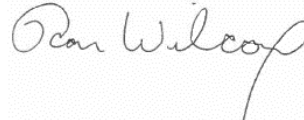
²²⁵ Chetty Opening Report, ¶ 360.

²²⁶ Chetty Opening Report, ¶ 356 (i).

²²⁷ Chetty Opening Report, ¶ 355 (iii); Chetty Backup Materials, “participant_coding_analysis.xlsx,” Column X.

103. Finally, as discussed in Section VI.B, the design of Prof. Chetty’s “think aloud” study does not allow her to draw causal conclusions because it cannot isolate the effect, if any, of the alleged “dark patterns.”²²⁸

Executed this 23rd day of April, 2025

A handwritten signature in cursive script, reading "Ron Wilcox", written in black ink on a light gray background.

Ronald T. Wilcox, Ph.D.

²²⁸ Chetty Opening Report, ¶ 287.